

[www.lifecell.in](http://www.lifecell.in)



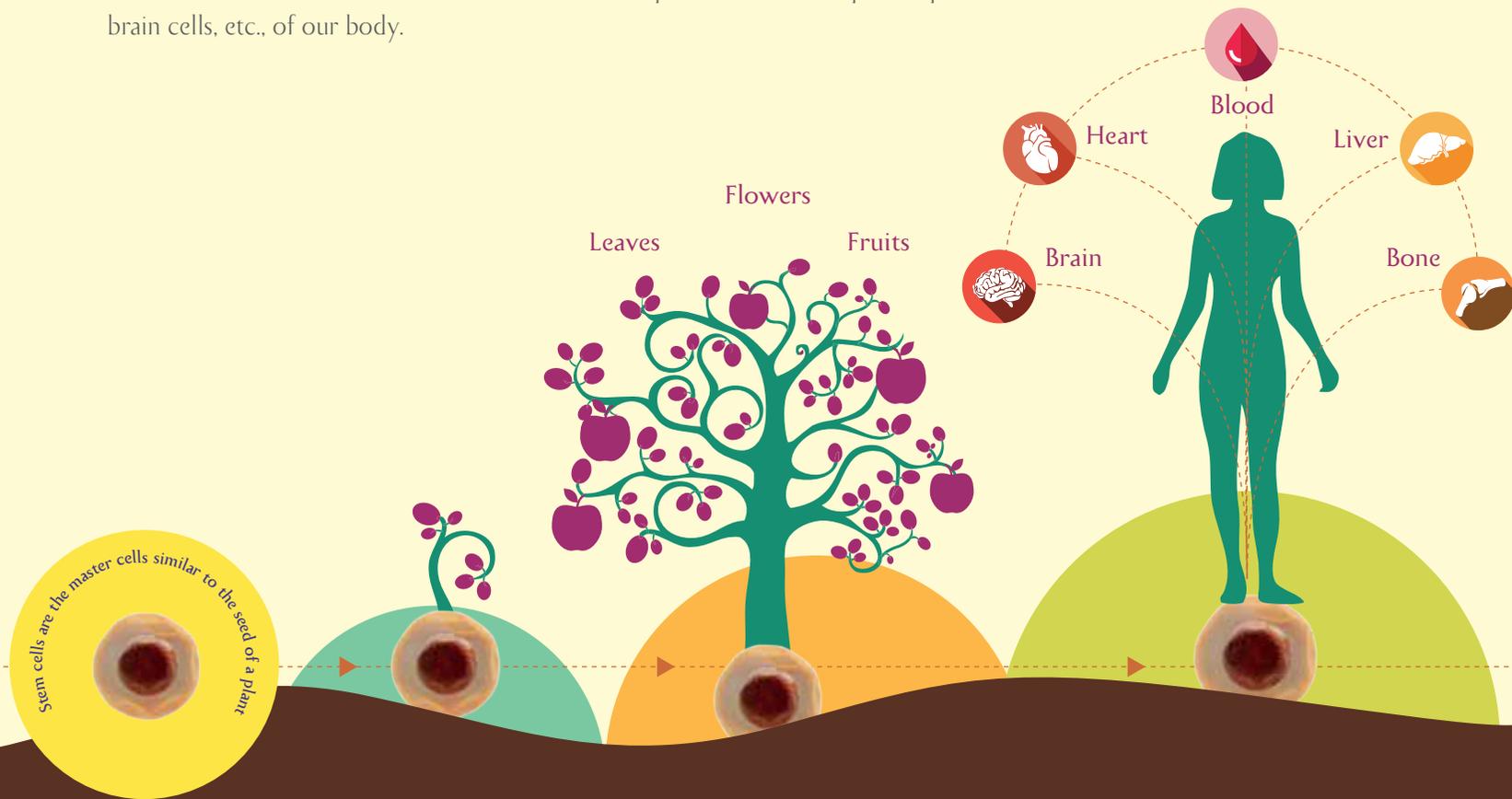
# Gift your Baby and the entire Family a Lifetime of good Health!

*Preserve your baby's Umbilical Cord Blood  
with LifeCell's Community Stem Cell Banking*



## What are Stem Cells?

Stem Cells are the master cells which act as the basic building blocks of our body. Just like the seed of a plant that gives rise to branches, leaves and fruits, these stem cells have the potential to develop into specialised cells such as blood cells, muscle cells, brain cells, etc., of our body.



## How do stem cells work?

Stem cells have the ability to replace affected cells and/or repair the affected parts thus restoring the normal functions of our body.

## Where are stem cells used?

Stem cells are currently used in modern day medicine & can help treat over 80+ medical conditions through replacement and repair approaches. For over 50 years, more than 13 lakh transplants have been done using stem cells across the globe<sup>1</sup>. Currently the number is more than 50,000 transplants every year<sup>2</sup> and growing as we speak.

## What is the Role of Stem Cells in today's healthcare?

80+

Today, stem cells have the ability to treat over 80+ blood related medical conditions such as Thalassemia, Lymphoma, Leukemia, Multiple Myeloma, Neuroblastoma, etc.<sup>3,4</sup>

500+

Over 500 human clinical trials for conditions such as Autism, Cerebral Palsy, Stroke, Diabetes is currently underway increasing the scope of future treatments<sup>5</sup>.

## What is the Probability of being Diagnosed for a condition treatable by Stem Cells?

Domestic Fire Extinguisher



A precaution to keep homes safe

In-flight Oxygen Mask



Made available for the rarest of the rare situations

Children's Medicaid



Very low chance of being used

1 in 217 will undergo a stem cell transplant by the age of 70 years<sup>6</sup>

# The Application Of Stem Cells In Medicine

Possibilities Growing Day By Day

## What's Now

Stem Cells today are used in the treatment of over 80+ medical conditions including

### Blood Disorders

Acute Myelofibrosis  
Agnogenic Myeloid Metaplasia (Myelofibrosis)  
Amyloidosis  
Aplastic Anemia (Severe)  
Beta Thalassemia Major  
Blackfan-Diamond Anemia  
Congenital Amegakaryocytic Thrombocytopenia (CAT)  
Congenital Cytopenia  
Congenital Dyserythropoietic Anemia  
Dyskeratosis Congenita  
Essential Thrombocythemia  
Fanconi Anemia  
Glanzmann's Thrombasthenia  
Myelodysplastic Syndrome  
Paroxysmal Nocturnal Hemoglobinuria (PNH)  
Polycythemia Vera  
Pure Red Cell Aplasia  
Refractory Anemia with Excess Blasts (RAEB)  
Refractory Anemia with Excess Blasts in Transition (RAEB-T)  
Refractory Anemia with Ringed Sideroblasts (RARS)  
Shwachman-Diamond Syndrome  
Sickle Cell Disease

### Cancers

Acute Biphenotypic Leukemia  
Acute Lymphocytic Leukemia (ALL)  
Acute Myelogenous Leukemia (AML)  
Acute Undifferentiated Leukemia  
Adult T Cell Leukemia/Lymphoma  
Chronic Active Epstein Barr  
Chronic Lymphocytic Leukemia (CLL)  
Chronic Myelogenous Leukemia (CML)  
Ewing's Sarcoma **OWN**  
Hodgkin's Lymphoma **OWN**  
Juvenile Chronic Myelogenous Leukemia (JCML)  
Juvenile Myelomonocytic Leukemia (JMML)  
Myeloid/Natural Killer (NK) Cell Precursor Acute Leukemia  
Medulloblastoma **OWN**  
Non-Hodgkin's Lymphoma  
Prolymphocytic Leukemia  
Plasma Cell Leukemia **OWN**  
Chronic Myelomonocytic Leukemia (CMML)  
Leukocyte Adhesion Deficiency  
Multiple Myeloma **OWN**  
Neuroblastoma **OWN**  
Rhabdomyosarcoma  
Retinoblastoma **OWN**  
Thymoma (Thymic Carcinoma)  
Waldenstrom's Macroglobulinemia **OWN**  
Wilms Tumor

### Immune Disorders

Adenosine Deaminase Deficiency (ADD)  
Bare Lymphocyte Syndrome (BLS)  
Chediak-Higashi Syndrome (CHS)  
Chronic Granulomatous Disease  
Congenital Neutropenia  
DiGeorge Syndrome  
Evans Syndrome  
Fucosidosis  
Hemophagocytic Lymphohistiocytosis (HLH)  
Hemophagocytosis Langerhans' Cell Histiocytosis (Histiocytosis X)  
IKK Gamma Deficiency (NEMO Deficiency)  
Immune Dysregulation, Polyendocrinopathy, Enteropathy, X-linked (IPEX) Syndrome  
Kostmann Syndrome (SCID)  
Myelokathexis  
Omenn Syndrome (SCID)  
Phosphorylase Deficiency (SCID)  
Purine Nucleoside (SCID)  
Reticular Dysgenesis (SCID)  
Severe Combined Immunodeficiency Diseases (SCID)  
Thymic Dysplasia  
Wiskott-Aldrich Syndrome  
X-linked Agammaglobulinemia  
X-Linked Lymphoproliferative Disorder  
X-Linked Hyper IgM Syndrome

### Metabolic Disorders

Congenital Erythropoietic Porphyria (Gunther Disease)  
Gaucher Disease  
Hunter Syndrome (MPS-II)  
Hurler Syndrome (MPS-IH)  
Krabbe Disease  
Lesch-Nyhan Syndrome  
Mannosidosis  
Maroteaux-Lamy Syndrome (MPS-VI)  
Metachromatic Leukodystrophy  
Mucopolipidosis II (I-cell Disease)  
Neuronal Ceroid Lipofuscinosis (Batten Disease)  
Niemann-Pick Disease  
Sandhoff Disease  
Sanfilippo Syndrome (MPS-III)  
Scheie Syndrome (MPS-IS)  
Sly Syndrome (MPS-VII)  
Tay Sachs  
Wolman Disease  
X-Linked Adrenoleukodystrophy

**OWN** Conditions that require patient's own stem cells for treatment (Autologous)

The rest of the conditions listed use stem cells from donor for treatment (Allogeneic)

Data extracted from American Society for Blood and Marrow Transplantation (ASBMT) and Parents Guide to Cord Blood Foundation

# Stem Cell Transplant Facilities

Across India, stem cell transplants are done in the following cities in the below listed hospitals

## Ahmedabad

- Apollo Hospital
- The Gujarat Cancer & Research Institute
- Sterling Hospital

## Bengaluru

- Manipal Hospital
- St.John's Medical College & Hospital
- HCG Hospital
- Columbia Asia Referral Hospital
- Narayana Hrudayala Multispeciality Hospital
- Command Hospital

## Chennai

- Global Hospital
- Apollo Specialty Cancer Hospital
- Adyar Cancer Institute
- Sri Ramachandra Medical Centre

## Coimbatore

- Kovai Medical Centre and Hospital
- G Kuppusamy Naidu Memorial Hospital

## Chandigarh

- Postgraduate Institute of Medical Education & Research
- Fortis Hospital Mohali

## Gurugram

- Fortis Memorial Research Institute
- Artemis Hospital
- Medanta (The Medicity) Hospital

## Hyderabad

- Yashoda Hospital
- American Oncology Institute
- KIMS Hospitals

## Indore:

- CHL - CBCC Cancer Center

## Jaipur

- Birla Cancer Centre
- Sawai Man Singh Medical College & Hospital
- Manipal Hospital

## Kerala

- Amritha Institute of Medical Sciences, Kochi
- Malabar Cancer Centre, Kannur

## Kolkata

- Tata Medical Centre
- Nil Ratan Sircar Medical College and Hospital
- Institute of Haematology & Transfusion Medicine Medical College
- Saroj Gupta Cancer Center & Research Institute (SGCC & RI)

## Ludhiana

- Christian Medical College and Hospital
- American Oncology Institute at DMCH

## Mumbai

- ACTREC
- Tata Memorial Centre
- L H Hiranandani Hospital
- Jaslok Hospital and Research Center
- INHS Asvini
- Prince Aly Khan Hospital
- P. D. Hinduja National Hospital
- Nanavati Hospital
- Kokilaben Dhirubhai Ambani Hospital

## Madurai

- Meenakshi Mission Hospital & Research Center

## New Delhi

- Army Hospital Research & Referral
- Dr. B.R.A. Institute Rotary Cancer Hospital
- B.L. Kapur Memorial Hospital
- Rajiv Gandhi Cancer Center
- All India Institute of Medical Sciences
- Max Super Speciality Hospital
- Indraprastha Apollo Hospitals
- Sir Ganga Ram Hospital

## Nashik

- Lotus Institute of Haematology and Oncology

## Nagpur

- Central India Institute of Haematology & Oncology
- National Cancer Institute (NCI), Jamtha

## Odisha

- S.C.B. Medical College and Hospital
- Institute of Medical Sciences and SUM Hospital

## Pune

- Sahyadri Speciality Hospital
- Armed Forces Medical College (AFMC)
- Command Hospital
- Ruby Hall Clinic

## Vellore

- Christian Medical College

## Vadodara

- Sterling Hospital
- Bhailal Amin General Hospital (BAGH)

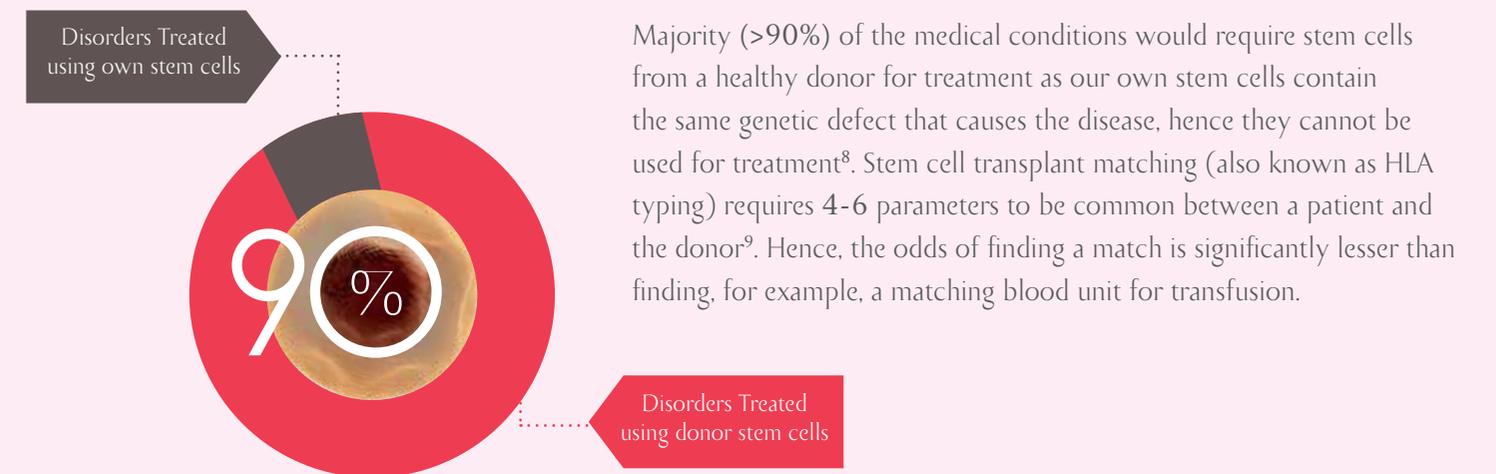
# Where are these Stem Cells found?

Stem cells are found and retrieved from various parts of the body such as the peripheral blood, bone marrow and the umbilical cord blood.

## Umbilical Cord Blood

Amongst these sources, umbilical cord blood is considered to be a ready source of stem cells. It can be preserved at birth and used for treatments when required. Stem cells extracted from cord blood are used efficiently in the treatment of blood-related conditions such as Beta Thalassemia Major, Leukemia, Lymphoma, Neuroblastoma, Sickle Cell Disease, Aplastic Anemia and so on. Cord blood stem cells have been used for over 30 years in more than 50,000+ transplants across the world<sup>7</sup>.

# Why do we need Stem Cells from a Donor?



Majority (>90%) of the medical conditions would require stem cells from a healthy donor for treatment as our own stem cells contain the same genetic defect that causes the disease, hence they cannot be used for treatment<sup>8</sup>. Stem cell transplant matching (also known as HLA typing) requires 4-6 parameters to be common between a patient and the donor<sup>9</sup>. Hence, the odds of finding a match is significantly lesser than finding, for example, a matching blood unit for transfusion.

# Where can you obtain matching donor Stem Cells?

Matching stem cells can be procured from a 'Public Stem Cell Bank' where frozen umbilical cord blood stem cells from unrelated donors are available at a cost. However, public cord blood banks have their own challenges in finding matching stem cells when required.



Public stem cell bank is similar to a Blood Bank

# How to find matching donor Stem Cells?

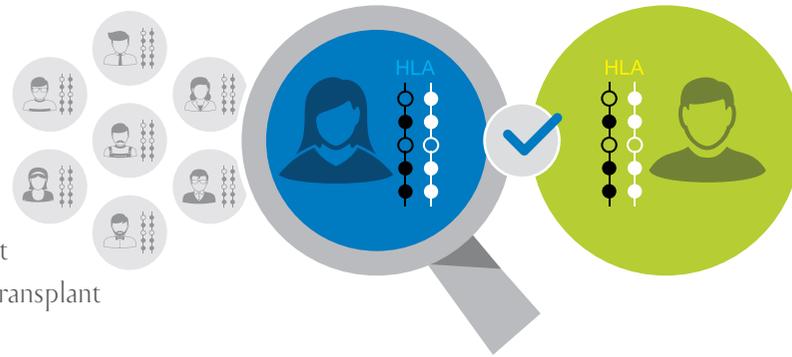
HLA typing is used to find a matching donor for stem cell transplant.

## What is HLA?

**Human Leukocyte Antigen** are special proteins that form HLA Markers. These markers help the immune system identify which cells belong to you. The most successful transplants happen when the patient's HLA and donor's HLA closely match<sup>9</sup>.

## HLA Matching<sup>9</sup>

- A test similar to a blood grouping test but much more complex
- Immediate family is the first source of donors as HLA markers are inherited from parents
- 4 out of 6 HLA match (~67%) between the patient & the donor is sufficient for cord blood stem cell transplant



## Challenges Of Finding A Matching Donor In Our Own Family



½ of your HLA markers are inherited from father and ½ from mother, so a match is difficult for any of the parents<sup>10</sup>.

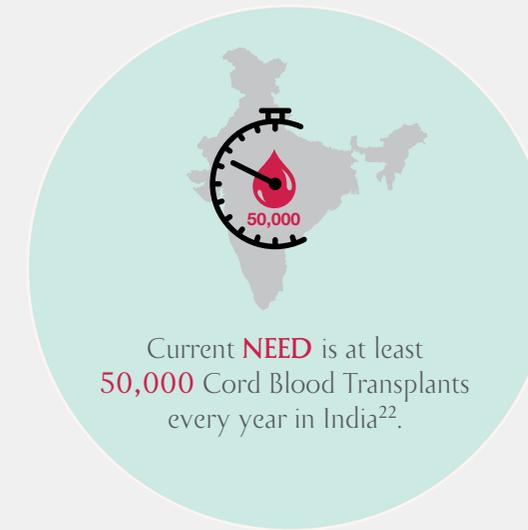


Siblings have 25% chance of being a full match<sup>9</sup>.



70% of Indian patients DO NOT find a match in their family<sup>8</sup>.

# Challenges in Public Cord Blood Banks



## Reasons For Low Stem Cell Transplants In India:

### Low Inventory:

India - **6,500 samples** & the only public bank has stopped accepting further samples due to lack of funds<sup>11</sup>.

Globally - **750,000 samples**<sup>12</sup>

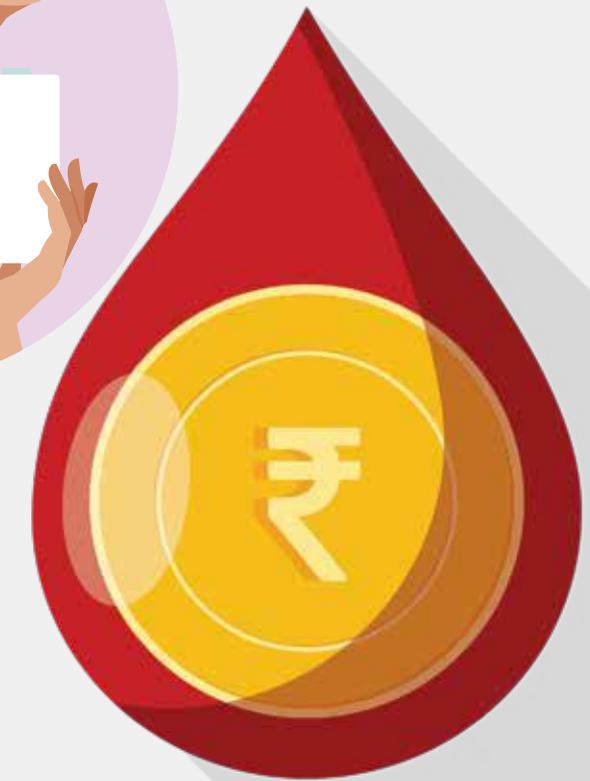
### High Cost:

- Cost to purchase 1 sample is ~INR **15-20** lakhs<sup>13</sup>.
- Adult may require 2 samples for a transplant doubling the cost of purchase<sup>8</sup>.
- Additional cost of hospital treatment of ~INR **15-20** lakhs<sup>13</sup>.
- Cost of procurement of 1 sample from abroad is ~ INR **30** lakhs<sup>11</sup>.

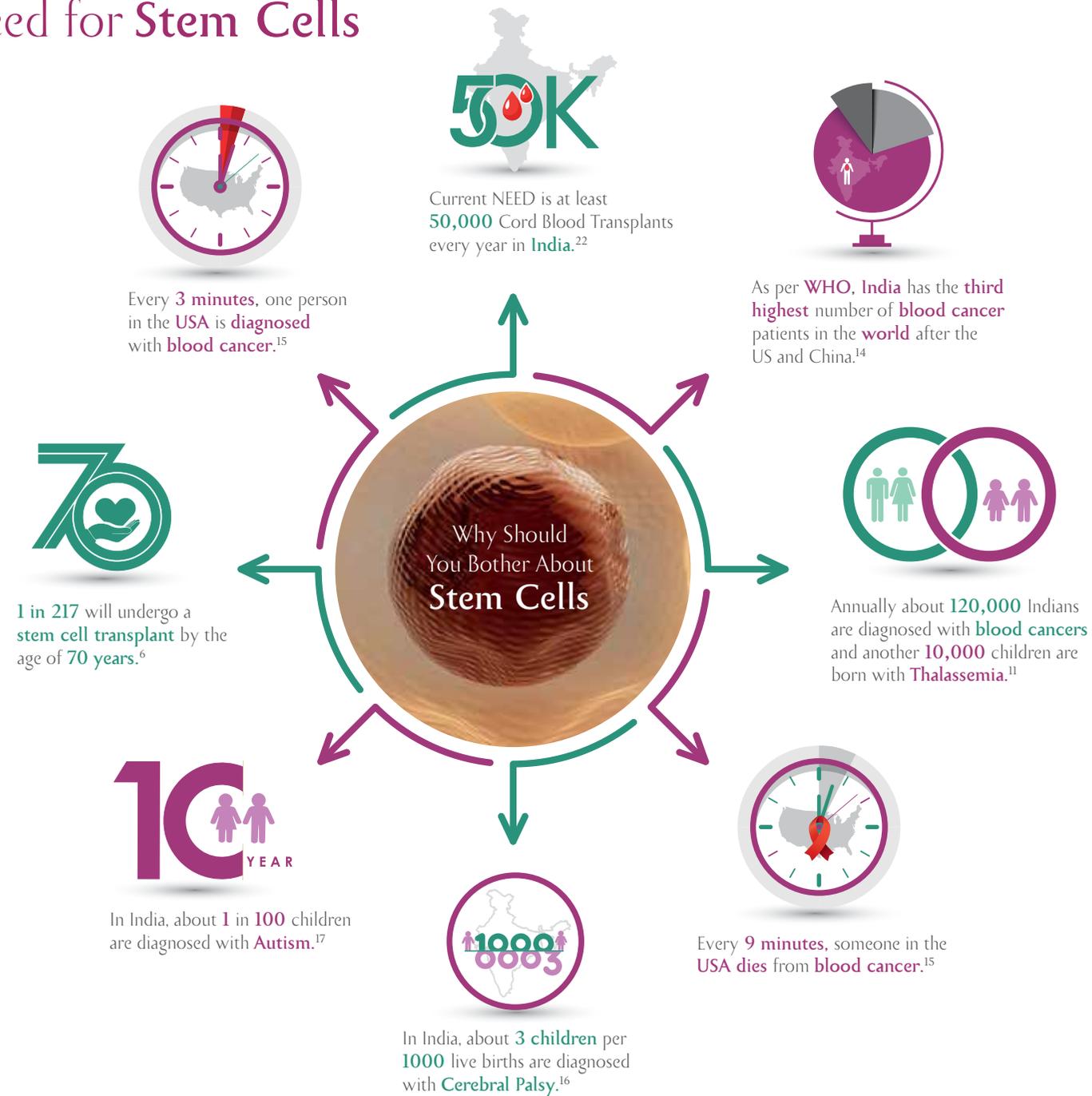
### Need of the Hour

- Bigger Indian inventory thereby, increasing probability of finding match
- Low cost for sample procurement

*“Since HLA is ethnicity dependent, the chances for an Indian to find a matching donor in public cord blood banks outside India is less than **10%**”<sup>11</sup>*



## Need for Stem Cells

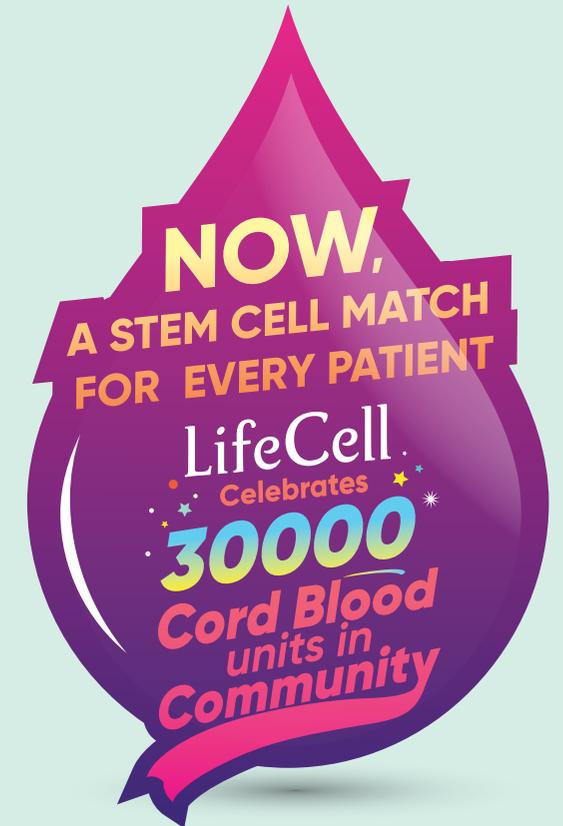


**In India, Although 1 Lakh New Blood Cancer Patients Are Diagnosed Annually, Only About 2000 Stem Cell Transplants Are Done Every Year<sup>18</sup>**

## How does LifeCell Community Stem Cell Bank work?

It works on the concept of sharing preserved stem cells exclusively amongst its community members to find matching donor stem cells. This provides protection to the baby and all the immediate family members against all medical conditions treatable by stem cells.

- Parents preserve their baby's cord blood stem cells with LifeCell and join the community stem cell bank.
- Qualified cord blood stem cells units collectively become part of a common pool that is shared only between the community members. As the community pool grows with addition of more samples, it will give families the best chance of finding a matching donor stem cells from this pool.
- The preserved cord blood stem cells in this common pool can be accessed by the baby, siblings, parents and maternal & paternal grandparents.
- The parents hold exclusive ownership rights of the baby's cord blood stem cells for the first 2 years in case the baby requires its own cord blood to treat any medical condition arising due to developmental delays.
- Only LifeCell's Community Banking Program provides complete protection against all 80+ blood related medical conditions treatable by stem cells through own as well as donor stem cells.
- Community Banking is a cost effective way to support the public health need for unrelated umbilical cord blood transplants in India.
- Not only does Community Banking solve the challenges of low inventory and high costs of the public banking model, it is also a more sustainable business model compared to public banks.



- Current LifeCell Registry Size: 30000+ qualified samples (5 times of all public banks in India)
- An ICMR study says that a bank with over 25,000 donated cord blood samples provides 96% chance of finding a matching unit for an Indian<sup>19</sup>
- LifeCell's Community Stem Cell Bank has an exponentially growing cord blood inventory to offer best match rate in the coming years

## Exclusive Benefits For LifeCell Community Banking Members



**Complete Protection to the Baby** against all conditions treatable using stem cells (own & donor)



Protection to the baby's **siblings, parents and grandparents** (maternal & paternal) by providing unrelated donor stem cells



**Unlimited samples** retrievals and absolutely **free of cost each time for entire family**



Best probability of **finding matching donor stem cells**



Exclusive access to **LifeCell Registry** (already 5 times larger than any public stem cell bank in India)



India's Only Stem Cell Bank Offering **Dual Storage** at Chennai and Gurugram



**Unlimited Disaster Relief** of INR 20 lakhs each for every stem cell transplantation in case of any natural calamity



**Unlimited Financial Assistance** of INR 20 lakhs for every stem cell transplantation for baby, siblings & parents



Coverage for **Bone Marrow and Peripheral Blood Stem Cells Transplant** of INR 20 lakhs for every transplantation for baby, siblings & parents



**Unlimited Quality Guarantee** of INR 20 lakhs each for every stem cell transplantation in case of quality failure



**Continued Protection Against Rejection** of stem cells for the entire family even if baby's cord blood is of low volume / unfit for processing / storage



**Full Money Refund** (except sample collection charges) with continued benefits for family **till baby's 75 yrs of age**



**Free CFU Assay** on the stored cord blood stem cells



Free of cost "**GENOME-SCOPE**" tests for every stem cell transplantation

## LifeCell's Community Banking - Aligns With The Recommendations Of Medical Bodies And Stem Cell Transplant Physicians

*Private cord blood banking must be strongly discouraged. Public cord blood banking serves the actual purpose of preservation by providing a common pool of donor stem cells thereby increasing the chances of finding a match and expanding the treatment options for Indian patients.*

Consensus Statement of Indian Academy of Pediatrics (IAP) - 15th June, 2018<sup>8</sup>.

*In majority of blood disorders, the child's own stored cord blood cannot be used for the same child as they will carry the same genetic defect.*

Padma Shri Dr. K. K. Aggrawal,  
Immediate Past President of Indian Medical Association (IMA)  
- April, 2018<sup>20</sup>.

*Community cord blood banking is the perfect solution to bring technological capability to the masses - leveraging India's high birth rate to bring life changing treatments available to patients who have life-threatening illnesses.*

Dr. Purvish Parikh, Director, Precision Oncology and Research, Asian Institute of Oncology, Somaiya Ayurvihar Cancer Care Molecular Oncology Society - May 2017<sup>21</sup>.

*Cord blood transplants in India has been very low mainly due to high cost and limited number of units available. With more than 25,000 cord blood units, the bank shall be able to provide a matched cord blood for 96% of its patients.*

Dr. Rahul Bhargava, Director and Head, Hematology and Bone Marrow Transplant, Fortis Memorial Research Institute, Gurugram.<sup>22</sup>

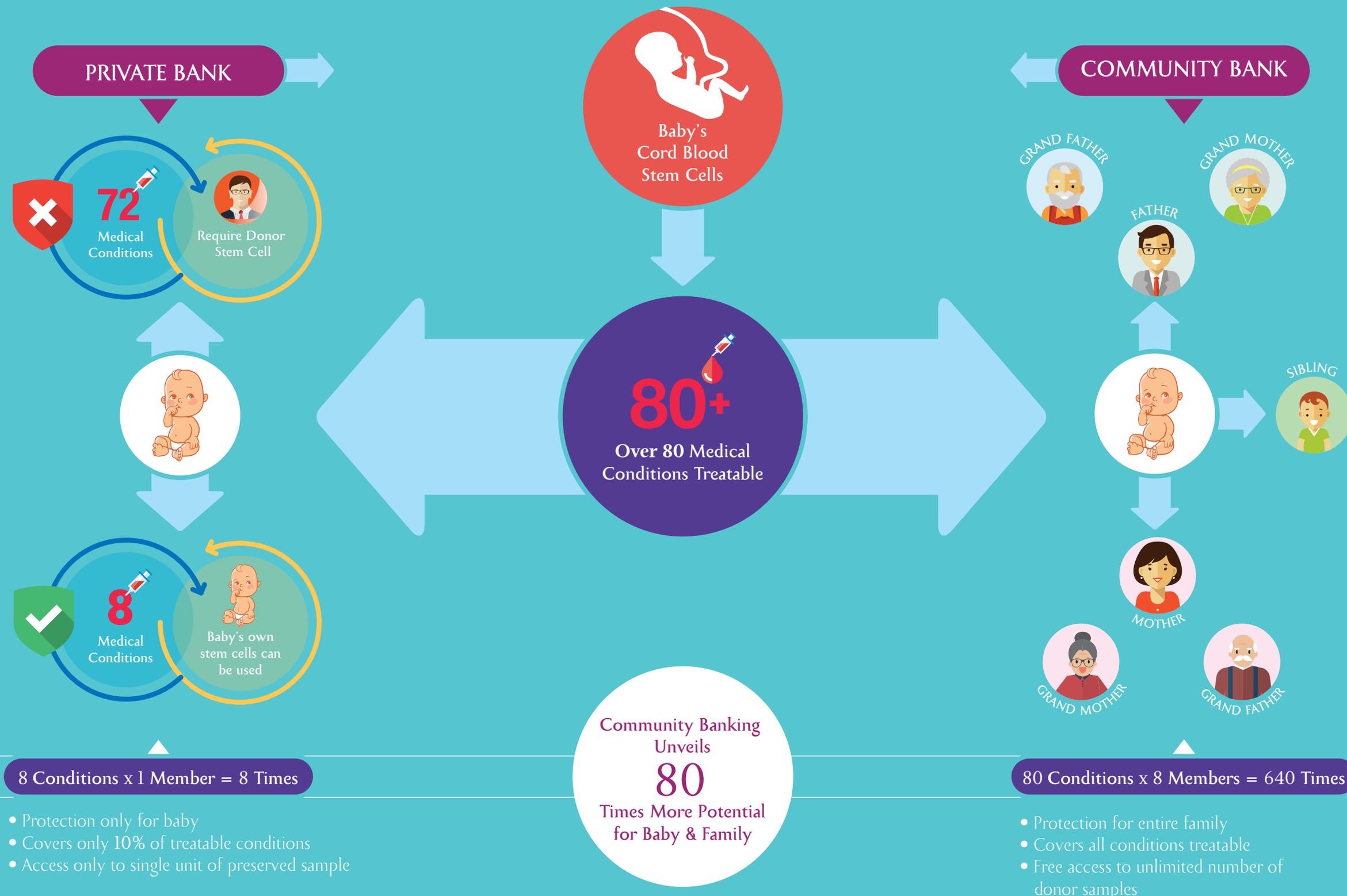
*Likelihood of using own cord blood is very small (less than 0.04%). Hence, the donation of cord blood to public bank is recommended because there is 100 times more likely chance of release of a unit from public bank compared to a private bank.*

Recommendations by ACOG,<sup>23</sup> AAP<sup>24</sup> and ASBMT<sup>25</sup>.

## Why choose Community Bank over Private Bank?

By choosing community banking, you unveil 80 times greater potential of your baby's stem cells through unmatched benefits such as protection from all conditions treatable by stem cells, complete family protection, unlimited number of samples at no additional cost.

*Nature gives a once-in-a-lifetime opportunity. Choose wisely.*



## LifeCell Testing And Processing Standards:

Once the samples reaches our lab, it is registered, tested for infectious diseases and assessed for cell count, viability and sterility. The credibility of LifeCell's testing standards depends on the following parameters:



Barcode



Automation



Interface



Accreditation

## List of Tests Performed on the Samples:

### Tests Performed On Cord Blood

#### At the time of Storage:

Cord Blood Group & Rh Typing, Cord Blood Volume, Total Nucleated Cell Count, Total Mononuclear Cell Count, Total CD 34 Cell Count, CD 34 Stem Cell Viability, Hematocrit, Sterility,

#### At 2 years from date of birth of the Child:

(For Specimens listed in LifeCell Community Banking Registry):

- Hemoglobinopathies
- HLA Typing by Next-Generation Sequencing (NGS)
- Colony Forming Unit (CFU) Assay

#### At Retrieval For Transplant:

Total Nucleated Cell Count, Total Mononuclear Cell Count, Total CD 34 Cell Count, CD 34 Stem Cell Viability, Hematocrit, Sterility, Colony Forming Unit (CFU) Assay, HLA Typing for Donor by NGS, HLA Typing for Recipient by NGS, Inherited Diseases Testing by Next-Generation Sequencing (NGS), Pediatric Cancer Profiling Testing by Next-Generation Sequencing (NGS)

### Tests Performed on Mesenchymal Stromal/Stem Cells (MSC's) at retrieval for transplant:

Viable Mononuclear Cell Count, Sterility, Mycoplasma Endotoxin, Cell Morphology, Differentiation Potential, Potency, Flow Marker Positives: CD 90, CD 73, CD 105, Flow Marker Negatives: CD 34, CD 45, CD 14, CD 19, HLA-DR

### Tests Performed On The Maternal Blood Sample

Blood Group and Rh Typing, Anti-HCV, Anti-HBC, HBSAg, HTLV I/II, Malaria, CMV-IgM, CMV-IgG, HIV I/II, Syphilis; and Nucleic Acid Testing (NAT) is performed for HIV and HCV viruses

#### ^ Eligibility Criteria For Cord Blood Specimen to Qualify for Listing In LifeCell Registry<sup>26</sup>:

- **Total Nucleated Cells** :  $\geq$  500 Million ( $\geq$  85% viable cells)
- **Viable CD34+ Cells** :  $\geq$  1.25 Million
- **Maternal ID testing** : Negative (Except CMV-IgG)
- **Sterility testing** (bacteria & fungi) : Negative
- **Hemoglobinopathies** : No homozygous hemoglobinopathy
- **Maternal blood sample collection** : Within 7 days of childbirth
- **Infant Health History** : Signed by a registered medical practitioner

## Preservation Advantage

### India's First & Only Dual Storage Facility:

LifeCell's Dual Site Storage Stem Cell Bank with preservation facilities at Chennai & Gurugram ensures maximum security against any unforeseen natural disasters.

GURUGRAM

CHENNAI

### Highlights of Preservation Process:

- The harvested stem cells are mixed with cryo-preservation solution
- The sample is stored in specially designed, compartmentalized cryo-bags (25 ml), main bag (20 ml) and pilot bag (5 ml)
- The samples are placed within aluminium canisters and frozen down slowly
- Then the samples are placed in stainless steel tanks and maintained under below  $-196^{\circ}$  celsius
- After storage, a preservation certificate indicating cell count, viability, sterility, etc., at the time of preservation is sent to the Client
- On every birthday of the baby, an Annual Preservation Status Report with monthly temperature maintenance updates are also sent to the Client

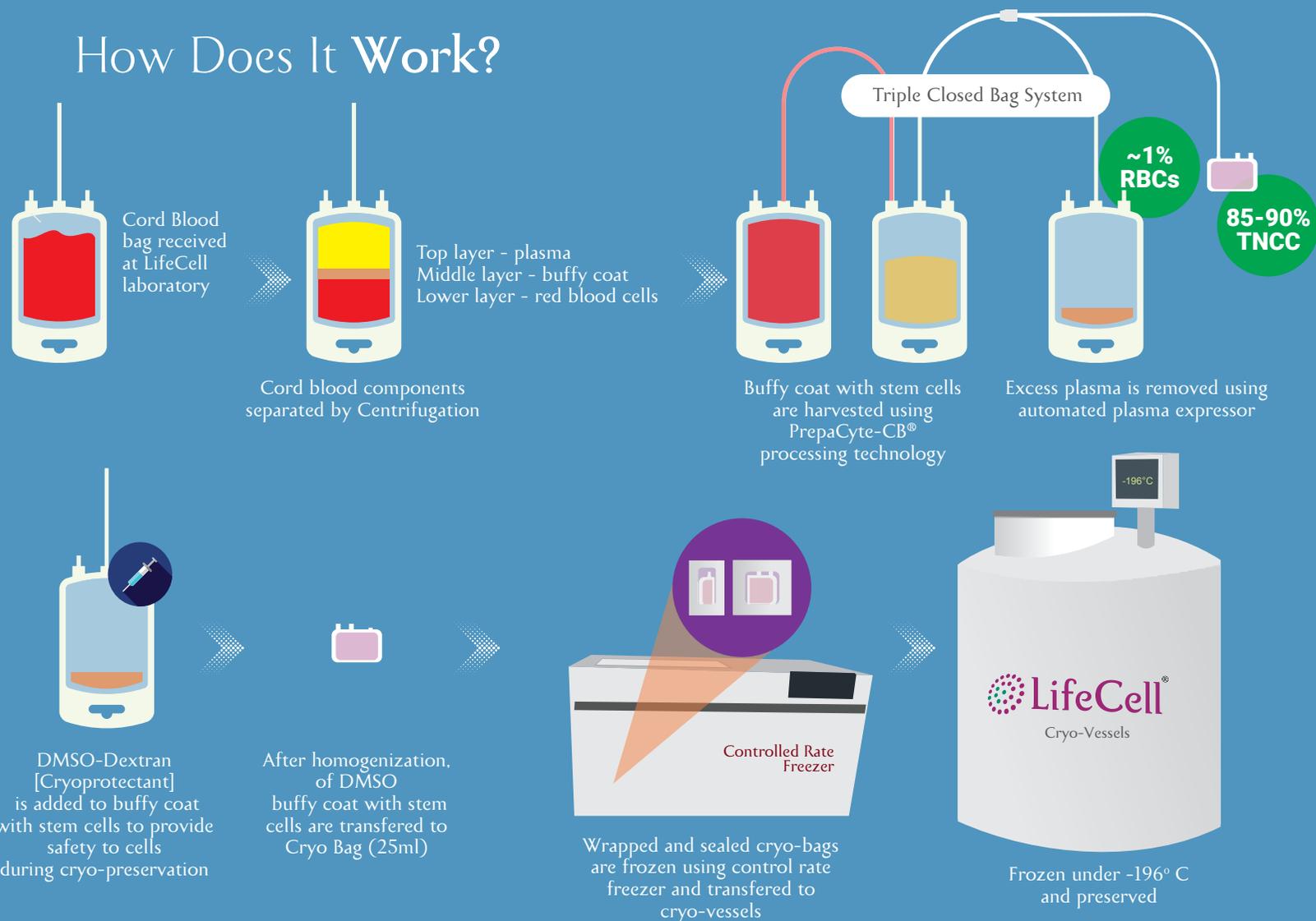
### LifeCell Preservation Standards:

- **Power-Back up:** Dual fall-over for power through UPS and DG systems and dual fall-over for cryo-preservation, self-sufficient for almost a month, substantial enough to make alternative arrangements
- **E-monitored:** Storage vessels that are connected to electronic transmitters and alarms for continuous monitoring with trigger alerts to ensure quick recoveries in event of temperature fluctuations
- **Disaster Resistant:** Seismic resistant buildings with plausibility to withstand natural calamities, with all units stored above ground to avoid submergence during floods
- **Precautionary Measure:** Sufficient measures to move the units off-site, such as fully loaded trucks supported with power and refrigeration supply
- **Security:** 24\*7 high security surveillance, with electronic access and CCTV monitoring

# PrepaCyte-CB®

A premier cord blood processing technology which extracts the **maximum number of healthy stem cells** and **provides superior red blood cell depletion** over all other methods.

## How Does It Work?



The choice is clear. Through our commitment to quality, we are able to offer the best cord blood product when it comes to what matters most. This could lead to better treatment outcomes, less worry and stress and possible financial savings.

## What Are The Benefits of PrepaCyte-CB®?



Parameters	PrepaCyte-CB®	Sepax / Sepax 2	AXP / AXP II	PrepaCyte-CB® Benefit To Patient
Days To Recovery* Post Transplant	16 Days <sup>27</sup>	20 Days <sup>28</sup>	21 Days <sup>29</sup>	Earlier engraftment time means the patient will spend less time in the vital stage where they don't have an immune system capable of fighting pathogens. It can also translate to less time in the hospital and less stress and worry waiting for the patient to feel better.
TNCC Extractions (%)	85 - 90% <sup>30</sup>	75 - 80% <sup>31,32,33,34,35</sup>	76% <sup>31</sup>	More the stem cells, higher the chances of successful stem cell transplantation
RBC Depletion (%)	99% <sup>36</sup>	84.70% <sup>37</sup>	70% <sup>37</sup>	Low risk of renal failure, Prevents blood group incompatibility, Prevents loss of precious stem cells by reducing need for 'washing' step to remove excess RBCs <sup>38</sup>

\* Recovery time is the median time to reach an absolute neutrophil count (ANC) of 500.

# LifeCell's Community Bank vs Other Private Banks

## Benefit Differentiators

Features	LifeCell Community Bank	Other Private Banks <sup>39</sup>
<b>BANKING MODEL SUPPORT FROM MEDICAL BODIES</b>		
Aligns with Recommendations of IAP, IMA, ACOG, AAP, ASBMT	✓	✗
<b>COVERAGE FOR STEM CELL TRANSPLANTS</b>		
Baby's Own Cord Blood (only 10% conditions)	✓	✓
One additional Umbilical Cord Blood (UCB) when Baby uses own UCB	✓	✓
Unrelated Donor Stem Cells for Baby (for 90% conditions)	✓	✗ <sup>^</sup>
Exclusive access to LifeCell (LC) registry including pre-existing conditions	✓	✗
Unlimited Stem Cells from LC registry (Free of cost)	✓	✗
Protection to baby's siblings and parents	✓	✗ <sup>^^</sup>
Protection to baby's grandparents (Maternal and Paternal)	✓	✗
Unlimited financial assistance of INR 20 lakhs for every Stem Cell Transplant (SCT)	✓	✗ (Maximum upto INR 20 lakh)
BM or PB SCT assistance of INR 20 lakhs for every transplant	✓	✗
Protection against 80+ approved blood conditions for baby and family	✓	✗ <sup>^</sup> & <sup>^^</sup> & <sup>^^^</sup>
Continued protection even if baby's UCB is of low volume or unfit for Processing/Storage	✓	✗
<b>QUALITY GUARANTEE AND DISASTER RELIEF PROGRAM BENEFITS</b>		
Unlimited Coverage of INR 20 lakhs for Every SCT	✓	✗ (Only once upto INR 20 lakhs)
Access to LC Registry for Finding Suitable Replacement Stem Cells	✓	✗
Transit Insurance (collected cord blood and processed stem cells)	✓	✗
Coverage Tenure	✓ (75 years)	✗ (Only for initial 21 years)
<b>STORAGE LOCATIONS</b>		
Dual Site Storage	✓	✗
<b>GenomeScope</b>		
Genetic Testing on samples before release for every stem cell transplantation	✓	✗

Features	LifeCell Community Bank	Other Private Banks <sup>39</sup>
FULL MONEY REFUND		
Full Refund (except CC) with Continued Benefits, if Baby's Sample Used by Other Community Member	✓	✗
CORD BLOOD EXPANSION		
Cord Blood Expansion for Baby, Siblings and Parents	✓	✓
GUARANTEED EXPANDED MESENCHYMAL STROMAL/STEM CELLS (MSC's)		
DCGI Approved Product For Use in Clinical Trial	✓	✗
In-house, Ready-to-Use MSCs from Donated UCT (subject to approval by regulatory authorities)	✓	✗
1000 Million MSC's For Every Transplant	✓	✗ (50 Mn to 1000Mn maximum)
Time	✓ (Within 7 days)	✗ (upto 90 days)
Cost	✓ (Free of cost)	✗ (~ INR 2-4 lakhs for 50Mn to 1000 Mn MSC's)
LIVES SAVED		
Transplant Experience / Retrievals	57 (*as on August 2019)	25-30 (all other Indian stem cell banks)
ADVANCED COLLECTION KIT BOX		
Strong Stainless Steel Box, Vacuum Insulated Temperature Maintenance, Eco-Friendly, Contamination Proof, Compact	✓	✗
FREE OF COST HLA TYPING USING NEXT GENERATION SEQUENCING (NGS)		
Baby, Siblings, Parents and Grandparents (Maternal & Paternal)	✓	✗ (Not for Grandparents)
Coverage Tenure	✓ (75 years)	✗ (Free only during first 21 years)
PRICING PLANS (ASSUMING APPLE TO APPLE COMPARISON)		
Annual Storage Plan (easy on pocket)	✓	✗
21 Years Storage Plan (One Time Payment)	50,000 (Community) + CC	~INR 1 to 4 lakhs + CC
75 Years Storage Plan (One Time Payment)	65,000 (Community) + CC	~INR 1 to 4 lakhs + CC + ~INR 20,000 (for Lifetime Plan)

\* UCB - Umbilical Cord Blood, UCT - Umbilical Cord Tissue, LC - LifeCell International Pvt. Ltd., PrB - Private Bank, BM - Bone Marrow, PB - Peripheral Blood, SCT - Stem Cell Transplant, CC - Sample Collection Charges

^ In Private Banks, it is mandatory to use Baby's Own UCB to get one additional matching sample from public bank if a match is available. But, in 90% conditions baby CANNOT use Own UCB, hence the baby is deprived of protection from donor stem cells.

^^ Siblings: Only if it matches baby's cord blood (chances are only 25%) and in such case only 1 additional UCB from public bank. Parents : They cannot use baby's cord blood due to lack of HLA matching. Since in PrB it is mandatory to use baby's own UCB to get 1 additional UCB from public bank, Parents don't get donor stem cells.

^^^ Baby : Only 8 conditions using own UCB.

\*CC: Sample Collection Charges

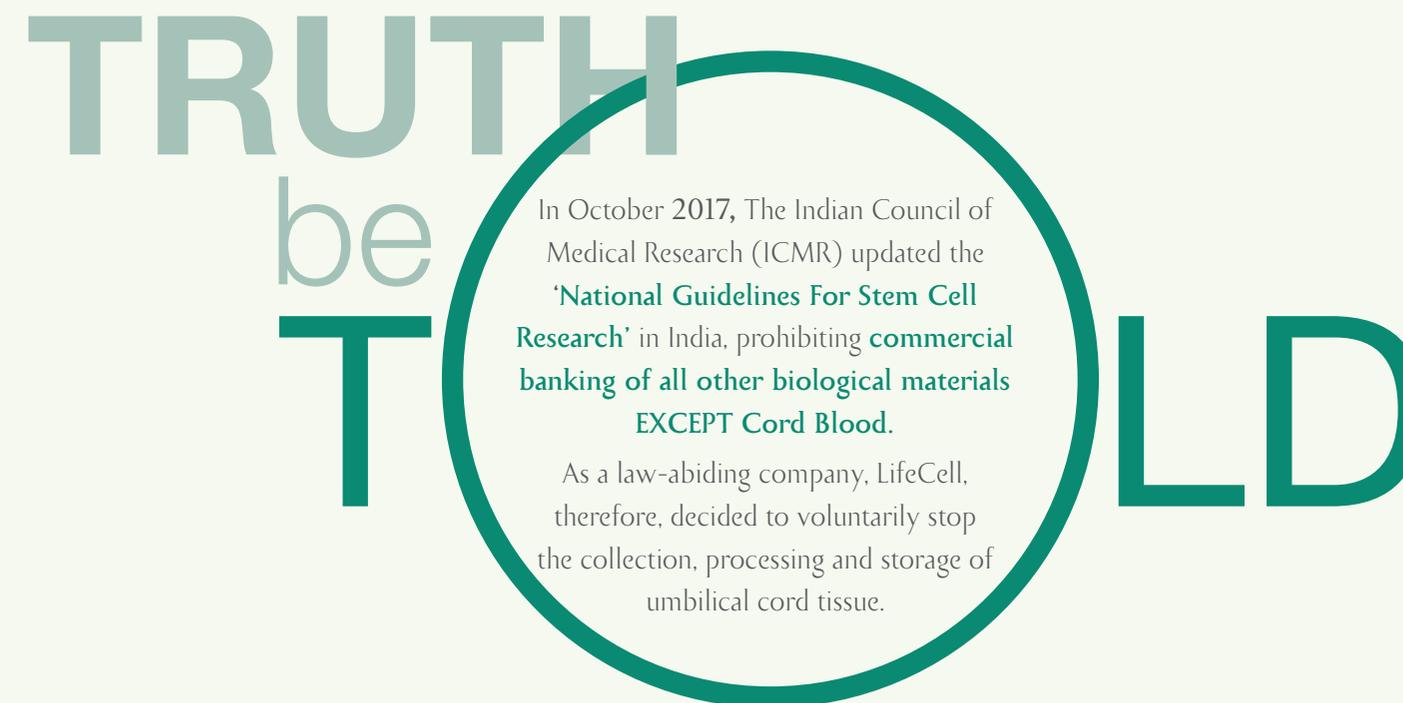
## LifeCell's Guaranteed Mesenchymal Stromal/Stem Cells (MSC's) Program

MSC's are a type of stem cells that have the potential to differentiate into bones, cartilages and muscles<sup>40</sup>, thereby making them capable of being used in several therapeutic areas in future. Currently, the potential of these stem cells are being checked in several human clinical trials across the world. Since MSC's are considered to be 'universal donor cells'<sup>41</sup> they are being made available off-the-shelf for immediate treatment as they don't need donor-recipient matching. In India, a biotech company has already received the DCGI approval to market such an expanded MSC's product developed from donated adult human bone marrow for treatment of Critical Limb Ischemia (CLI) due to Buerger's Disease<sup>42</sup>.

Factors	Other Banks	LifeCell's Guaranteed MSCs Program	Benefits to LifeCell's Clients
Regulatory Position	Commercial banking of baby's own cord tissue is not licensed and is prohibited in India, to prevent exploitation of parents by banks who charge huge fees <sup>43</sup>	Provide DCGI approved expanded MSC's product derived from donated adult human bone marrow for immediate access <sup>42</sup> or NAC-SCRT approved MSC's from donated human cord tissue in future (subject to govt. regulations <sup>44</sup> )	<b>Regulatory Approved and Licensed MSC's</b>
Certainty of Expansion for Higher Volume of MSC's	Possibility of rejection of baby's own cord tissue due to contamination or no growth of cells during culturing. Thereafter, no compensation & no guarantee of MSC's if needed in future	No such uncertainty, since the expansion of MSC's is not dependent on a single source, but rather from many donated sources	<b>Guaranteed MSC's</b>
Time	90 days	7 days ready-to-use off the shelf	<b>Saves Time</b>
Quantity	50Mn to Maximum 1000 Mn	1000 Mn MSC's for Every Transplantation	<b>More Cells - More Protection</b>
Cost	~INR 2 to 4 lakhs for 50Mn to 1000 Mn MSC's	Free of cost	<b>Saves Money</b>

**DID YOU KNOW?** MSC's are Universal Donor Cells that do not need donor-recipient matching<sup>41</sup>. In fact, almost all the current active human clinical trials related to umbilical cord tissue are using MSC's obtained from donated sources<sup>45</sup>. In India, the DCGI has already approved the use of donated, expanded MSC's obtained from adult human bone marrow for treatment of CLI due to Buerger's Disease<sup>42</sup>.

## Why LifeCell Discontinued Cord Tissue Banking?



“

*Many stem cell banks in India still continue to collect and harvest stem cells from cord tissue, placenta, menstrual blood, adipose tissue and dental pulp? Is this allowed? “*

*Right now banks can only store stem cells derived from cord blood. Anyone offering to store stem cells derived from any other sources is indulging in unethical medical practice.<sup>46</sup>”*

**Dr. Geeta Jotwani**

Deputy Director General (Sr. Grade) (Scientist 'F'), Indian Council of Medical Research

”

### What if the baby or my family needs Mesenchymal Stem Cells (MSCs) in the future?

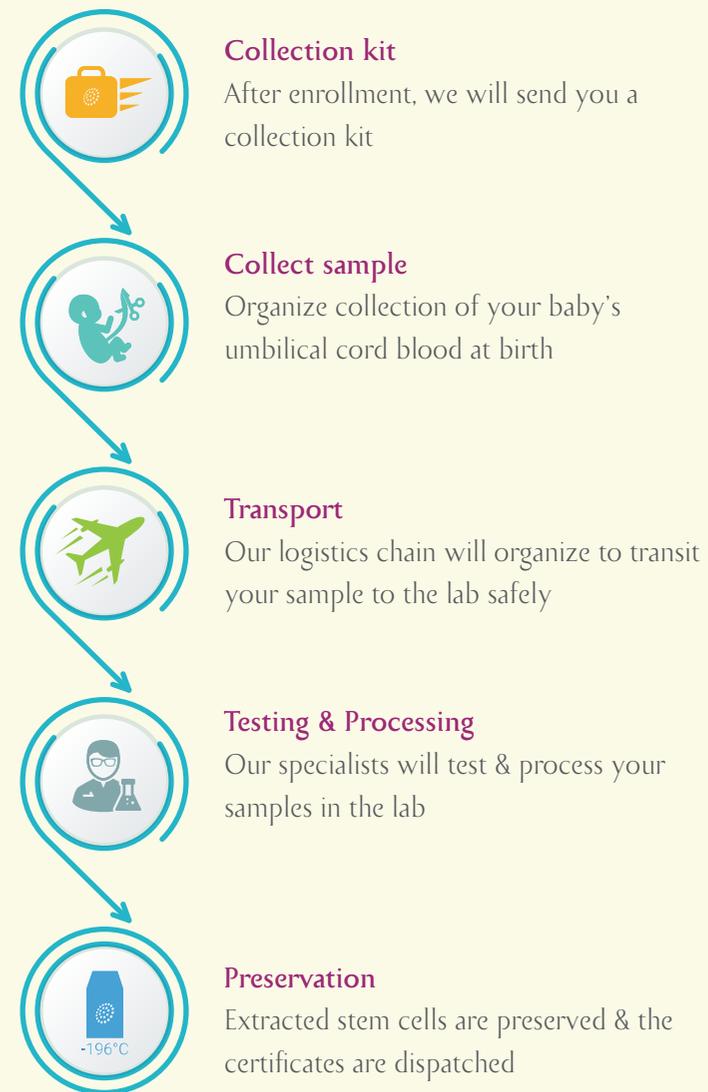
As part of LifeCell's Guaranteed MSCs Program, we assure all our Clients the protection of mesenchymal stem cells for future therapeutic purposes.

# Simple Steps To Preserve Your Baby's Stem Cells At LifeCell

## Steps you will take



## Care that we extend



## Why over 3 Lakh Parents trust LifeCell?

Choosing the right partner to preserve your baby's precious stem cells is the most important aspect of your decision. LifeCell, by expertise and experience backed by trust, reliability and personalised customer service stands to be your perfect choice.

Over 3 lakh parents have entrusted their baby's umbilical cord blood stem cells to LifeCell. Having pioneered stem cell banking in India for the first time, LifeCell takes the step towards bringing "**Community Stem Cell Banking**" to ensure that your baby and entire family stay protected with the power of stem cells.

## LifeCell Legacy

### Unmatched Experience

Over 15 years of expertise and experience in technological collaboration with CryoCell Inc., (the world's first private stem cell bank with over 27 years of experience)

### Most Accredited

Most Accredited Stem Cell Bank with accreditations from AABB, WHO GMP, NABL, ISMS, CAP and US FDA Registered

### World's largest ready-to-use inventory of Indian origin

LifeCell is currently the only stem cell bank that holds the world's largest ready-to-use inventory of cord blood stem cells of Indian origin



## Unmatched Preservation Benefits



### Free Stem Cell Expansion:

Clinical expansion of stem cells to provide higher volume of stem cells if required at the time of transplant at no additional cost



### Free Worldwide Shipment:

Shipment of stem cells to any part of the globe during transplant at no additional cost



### Medical Concierge:

Medical guidance on stem cell treatment options and recommended transplant centres with their specialisation will be shared during transplants



### Transplant Related Tests:

Sample testing for transplant at no additional cost



### Annual Preservation Status Report:

Preservation status report with details of monthly temperature track record shared once every year

## Our Advanced Umbilical Cord Collection Kit

Optimal standards of cold chain and physical safety are necessary for the maintenance of cell integrity and quality of the sample that is transported. LifeCell's steel kit ensures that your baby's stem cells are protected against fluctuations in external temperature and other damages.

- Robust Stainless Steel Body
- Optimum Transit
- Temperature
- Water Resistant
- Eco-Friendly
- Compact



## Retrieval Process

The preserved stem cells can be released only for approved transplants or approved clinical trials upon request from patient's transplant physician. HLA typing check is done between donor and recipient. Prior to release, the stem cells are tested for potency & viability and free expansion of stem cells is done if there is a need for higher volumes. The stem cells are then shipped using special dry-shippers to any location across the world where it is required for transplant.

For references, visit: [www.lifecell.in/references](http://www.lifecell.in/references)

## Still have questions?

We understand that you would require additional information. We want to help you by offering detailed answers to the most common queries that you may have.

### 1. Why are umbilical cord blood stem cells preferred over other sources of stem cells?

Stem cells can treat more than 80+ blood related medical conditions. Cord blood cells can be modified and does not have to be exactly matched to the patient like transplants from an adult donor thereby offering better transplant outcomes. Also, they can be easily collected at birth with no harm to mother or baby.

### 2. When stem cells are available in other parts of our body and can be retrieved when required, why should I preserve my baby's umbilical cord blood stem cells?

OR

### If I can use my own stem cells then why should I go for Community Banking?

Stem cells from our own body sources such as bone marrow and peripheral blood or even own cord blood can be used to treat only 10% of all blood conditions treatable by stem cells. In 90% of the treatments, we need stem cells from a matching donor. LifeCell's Community Banking offer the best chances to procure matching cord blood stem cells from another member of the community. Also, the entire family can retrieve unlimited stem cells from the LifeCell registry, absolutely free of cost.

### 3. What is difference between private banking and community banking?

Private stem cell banking preserves your baby's stem

cell exclusively for your baby's use only and in some cases for the sibling too. This offers protection only against conditions that can use your baby's own stem cells, which is only 10% of all conditions treatable by stem cells. For the treatment of the remaining 90% of the conditions, your baby's preserved stem cells cannot be used and you would require stem cells from a healthy donor from external sources. **Hence, medical bodies in India and abroad do not recommend Private Banking.**

Community stem cell banking works on the concept of sharing baby's stem cells amongst a community of parents. While your baby's own stem cells can be accessed for protection against conditions requiring own stem cells, stem cells from the common pool serve as a source of donor stem cells offering protection against remaining conditions. Hence your baby is protected against all conditions treatable by stem cells. **LifeCell's Community Banking aligns with the recommendations of medical bodies in India and abroad<sup>8</sup>.**

### Did You Know?

LifeCell has successfully facilitated 57 cord blood transplants of which 12 were using child's own stem cells and 45 using sibling's matched stem cells. This includes 14 international shipments (USA, Singapore and Thailand). This clearly is a testimony of LifeCell's service quality and global acceptance. (data as on August 2019).

5. **When will my baby's cord blood stem cells get listed on the LifeCell Registry?**

Some baby's may require their own cord blood stem cells within the first 2 years to treat certain medical conditions like Autism, Cerebral Palsy, etc. that arise due to developmental delays. For this purpose, your baby's own stem cells are preserved with exclusive rights to access only by you during the first 2 years. It will be moved to LifeCell Registry only after this period. In the event the baby is diagnosed of medical condition that requires the use of own cord blood stem cells, the Parents may exclusively reserve the Child's own stem cells without exiting the LifeCell Community Banking Program by providing documentary evidence from the treating transplant physician to LifeCell.

6. **What if my baby's stem cells are released to some other member in the community and later on my baby requires its own stem cells?**

There is no risk to sharing your baby's stem cells. Similar to blood, our body's stem cells also regenerate continuously. If required, own stem cells can be easily retrieved from the blood or bone marrow of our body.

For instance, Actor Lisa Ray did not have the facility to preserve her umbilical cord blood stem cells at birth. However, in order to treat her Multiple Myeloma, a type of blood cancer, her own peripheral blood stem cells came to her rescue and gave her a new lease of life.

7. **If my child's stem cells are released to other community member, will my child continue to have access to stem cells from the community pool?**

Yes. Not only your baby but your entire family (Parents, Siblings, Maternal and Paternal Grandparents) will also continue to have access to community donor stem cells during the duration of the contract with

unlimited access to matching stem cell units and all other benefit programs as applicable.

8. **How much cord blood is needed for a transplant?**

When treating blood related medical conditions, the stem cells transplant dose should be at least 25 million TNC per kilogram of patient body weight<sup>40</sup>. As per our published data on our in-house cord blood processing, the median size of our cord blood collections is 98 ml. This corresponds to 650 to 750 million Total Nucleated Cells (TNC) or around 2 million cells that test positive for the stem cell marker CD34. The median RBC depletion achieved was 95.4%.<sup>22</sup>

9. **If community stem cells banking is highly beneficial, why did my doctor not advise me on the same?**

As per the India Academic of Pediatrics(IAP), there is lack of awareness regarding the utility of cord blood stem cells and its uses amongst the obstetricians and pediatricians. A study suggested that 58% Indian doctors were unaware of the indications of cord blood stem cells; another alarming study showed that 90% doctors felt that umbilical cord blood from a child can be used to treat thalassemia in the same child, which is also incorrect. These studies highlight the need for awareness among the Indian doctors regarding the established and approved indications of cord blood in own and donor stem cell transplantation<sup>8</sup>.

**Did You Know?**

**Continued Protection Against Rejection:**

Private Banks would reject an unfit sample and refund your money without any further protection. But, LifeCell's Community Banking, continues to protect your baby & the entire family regardless of the low volume or unfit nature of the banked cord blood unit

LifeCell  
is proud to introduce

# Genome-Scope

LifeCell is the 1<sup>st</sup> and only stem cell bank globally to perform genomic profiling of stem cell units before transplant at **NO EXTRA COST!**

**THIS SERVICE PROVIDES THE FOLLOWING**

Uses Cutting-Edge Next Generation Sequencing (NGS) Technique

Screens for thousands of Inherited Disorders and Pediatric Cancers

Provides protection against several transplant-related disorders such as Donor Derived Leukemia

## WHAT DOCTORS HAVE TO SAY ABOUT GENOME-SCOPE



**Dr. Purvish Parikh,**  
(Senior Haemato-Oncologist)

"Introduction of Genetic Tests on the cord blood units before release would provide doctors and families of patients additional assurance regarding the quality of the samples that can be utilised for stem cells transplant. If the cord blood unit to be used is free from the risk of carrying cancers or inherited diseases, it is a big advantage."

Notes:



## LifeCell's Sign-in Benefits

For the first time, LifeCell brings you a rich user experience once you enrol for **Stem Cell Banking**.

Sign in to the **LifeCell website** with your **CRM number & track your plan details** (Storage plan, Payment details & options, Sample storage temperature, Download reports) in **real-time**.

CALL 1800 266 5533 | SMS LIFECELL TO 53456

**My Account**

Baby Services

Umbilical Cord StemCell Banking ▶ Storage Plan & Payments ▶ Upgrade to Community Banking ▶ Pay Now

Storage Status & Report ▶ Cord Blood ▶ Maternal Blood ▶ Check Graphical analysis of sample storage temperature

Statement Of Accounts ▶ Invoice & Payment Details

Documents ▶ Transplant Related Forms

Login

Email or Mobile Number

Enter valid email or mobile number

Create an Account **Send OTP**



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