



## What diseases may be treated using cord blood today?

Cord blood stem cell transplants have already changed—and saved—thousands of lives around the world. They may be used to treat more than 80 diseases, including numerous types of malignancies, anemias, inherited metabolic disorders and deficiencies of the immune system.<sup>1</sup> In fact, cord blood stem cells have been used in more than 30,000 transplants worldwide.<sup>2</sup>

Here is a list of some of those diseases:

### ACUTE LEUKEMIA

- Acute Lymphoblastic Leukemia (ALL)
- Acute Myelogenous Leukemia (AML)
- Acute Biphentotypic Leukemia
- Acute Undifferentiated Leukemia

### CHRONIC LEUKEMIA

- Chronic Myelogenous Leukemia (CML)
- Chronic Lymphocytic Leukemia (CLL)
- Juvenile Chronic Myelogenous Leukemia (JCML)
- Juvenile Myelomonocytic Leukemia (JMML)

### Other Disorders of Blood Cell Proliferation (all therapies are allogeneic)

- Aplastic Anemia
- Fanconi Anemia (Note: the first cord blood transplant in 1988 was for FA, an inherited disorder)
- Paroxysmal Nocturnal Hemoglobinuria (PNH)
- Pure Red Cell Aplasia

### HISTIOCYTIC DISORDERS

- Familial Erythrophagocytic Lymphohistiocytosis
- Histiocytosis-X
- Hemophagocytosis

### INHERITED METABOLIC DISORDERS

- Mucopolysaccharidoses (MPS)
- Hurler's Syndrome (MPS-IH)
- Sanfilippo Syndrome (MPS-III)
- Maroteaux-Lamy Syndrome (MPS-VI)
- Adrenoleukodystrophy
- Krabbe Disease
- Niemann-Pick Disease
- Metachromatic Leukodystrophy
- Scheie Syndrome (MPS-IS)
- Hunter's Syndrome (MPS-II)
- Morquio Syndrome (MPS-IV)
- Sly Syndrome, Beta-Glucuronidase Deficiency (MPS-VII)
- Mucopolipidosis II (I-cell Disease)
- Gaucher's Disease
- Wolman Disease

### INHERITED ERYTHROCYTE ABNORMALITIES

- Beta Thalassemia Major
- Sickle Cell Disease

### INHERITED IMMUNE SYSTEM DISORDERS

- Ataxia-Telangiectasia
- Kostmann Syndrome
- DiGeorge Syndrome
- Bare Lymphocyte Syndrome
- Omenn's Syndrome
- Leukocyte Adhesion Deficiency

### continued...INHERITED IMMUNE SYSTEM DISORDERS

- Severe Combined Immunodeficiency (SCID)
- CID with Adenosine Deaminase Deficiency
- Absence of T & B Cells SCID
- Absence of T Cells, Normal B Cell SCID
- Common Variable Immunodeficiency
- Wiskott-Aldrich Syndrome
- X-Linked Lymphoproliferative Disorder

### INHERITED PLATELET ABNORMALITIES

- Amegakaryocytosis / Congenital Thrombocytopenia

### OTHER INHERITED DISORDERS

- Osteoporosis
- Lesch-Nyhan Syndrome
- Cartilage-Hair Hypoplasia
- Glanzmann Thrombasthenia

### LYMPHOPROLIFERATIVE DISORDERS

- Non-Hodgkin's Lymphoma
- Hodgkin's Disease

### MYELODYSPLASTIC SYNDROMES

- Acute Myelofibrosis
- Agnogenic Myeloid Metaplasia (myelofibrosis)
- Polycythemia Vera
- Essential Thrombocythemia

### PHAGOCYTE DISORDERS

- Chediak-Higashi Syndrome
- Chronic Granulomatous Disease
- Neutrophil Actin Deficiency
- Reticular Dysgenesis

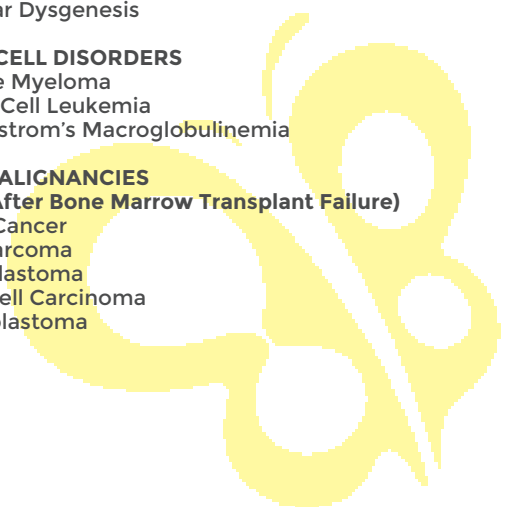
### PLASMA CELL DISORDERS

- Multiple Myeloma
- Plasma Cell Leukemia
- Waldenstrom's Macroglobulinemia

### OTHER MALIGNANCIES

#### (Rescue After Bone Marrow Transplant Failure)

- Breast Cancer
- Wing Sarcoma
- Neuroblastoma
- Renal Cell Carcinoma
- Retinoblastoma



1 <http://bethematch.org/Support-the-Cause/Donate-cord-blood/Cord-blood-is-changing-lives/>

2 Karen K. Ballen et al. Umbilical cord blood transplantation: the first 25 years and beyond. Blood. July 25, 2013 vol. 122 no. 4 491-498.



## Emerging Research

Today, cord blood can be used in the treatment of over 80 life-threatening diseases.<sup>1</sup> Emerging research is expanding the list of diseases and conditions that may be treated with cord blood and mesenchymal stem cells.

### Cord Blood Research

Right now, researchers are looking for new ways to heal the body using cord blood. Clinical trials are underway around the world to determine how cord blood could be used in the future to treat:<sup>3</sup>

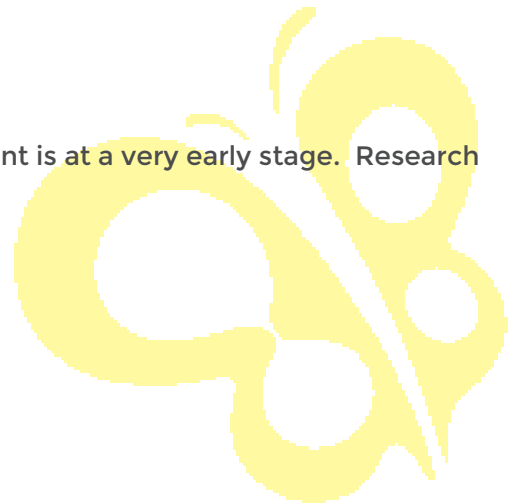
- Autism
- Acquired Hearing Loss
- Type 1 Diabetes
- Cerebral Palsy
- Hypoxic-Ischemic Encephalopathy
- Hypoplastic Left Heart Syndrome
- Inborn Errors of Metabolism
- Spinal Cord Injury
- Stroke

### Cord Tissue and Mesenchymal Stem Cell (MSC) Research

MSCs offer a number of unique properties that researchers are currently investigating. In fact, researchers are now testing the potential of MSCs, derived from bone marrow or adipose tissue, in a variety of clinical trials for the following conditions and diseases:<sup>3</sup>

- Bone and Cartilage Repair
- Autoimmune Disorders: Crohn's Disease, Multiple Sclerosis, Rheumatoid Arthritis
- Cardiovascular and Peripheral Vascular Disease
- Liver Disease
- Parkinson's Disease
- Spinal Cord injury
- Wound Repair
- Critical Limb Ischemia

Cord tissue is a rich source of MSCs and its clinical development is at a very early stage. Research suggests it may have clinical utility in the future.



<sup>3</sup> <https://clinicaltrials.gov>