

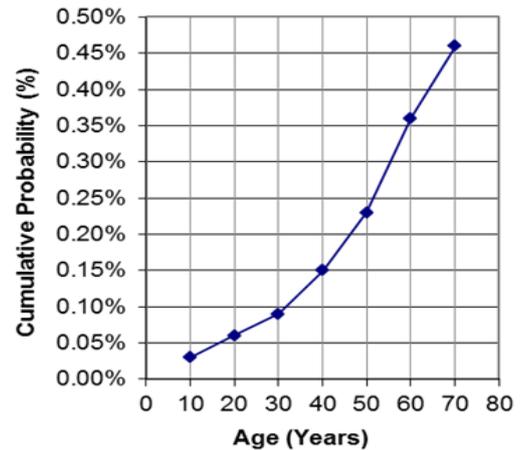


*An educational fact sheet based on information provided by Parent's Guide to Cord Blood Foundation*

Umbilical cord blood (UCB) is an accepted source of stem cells for any of the diseases that are treated using hematopoietic stem cells.

Since 1988 UCB stem cells have been used in the treatment of haematological diseases and cancers. By the end of 2009 approximately 20,000 cord blood transplants had been performed world-wide.

The cumulative probability that a person will have some type of stem cell transplant by age 70, either from their own cells or from a donor, is approximately 1 in 200, calculated in 2008. This is not the probability of needing a transplant, it is the probability of actually having one, assuming that there is no difficulty finding a matching donor.



In the USA, 1 in 217 people have a transplant by the age of 70 (Nietfeld et al 2008)

### How are cord blood stem cells used today?

Today cord blood is often used as a substitute for bone marrow in stem cell transplants. More than 80 diseases are treated this way, including cancers, blood disorders, genetic and metabolic diseases. Seventy percent of patients who need a stem cell transplant do not have a matching donor in their own family, and their physician must search public registries of donors. The National Marrow Donor Program (BeTheMatch.org) is dedicated to matching patients with donors world-wide. There is a shortage of bone marrow donors who match minority patients. Cord blood donations are particularly helpful to patients of minority or mixed heritage because cord blood does not have to be matched as closely to the patient as stem cells from a bone marrow donor.

### How may cord blood stem cells be used in the future?

Medical research is developing new therapies where stem cells help the body to recover from various injuries and repair itself. Children who have their own cord blood in storage may have more medical options later in life. Therapy with cord blood has been proven effective in the treatment of cerebral palsy. Ongoing clinical trials are using cord blood to treat cerebral palsy and similar disorders, brain and spine injuries, autism, acquired hearing loss, and type 1 diabetes.



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### Odds Of A Child Using Its Own (Autologous) Cord Blood Stem Cells

Odds	Indication
1 in 5,000	Stem cell transplant by the age of 20 in the USA
1 in 8 children ages 6-19	Acquired hearing loss prevalence in USA
1 in 68 children	Autism rate in USA
1 in 300 children ages 5-10	Cerebral Palsy prevalence in USA
1 in 45 premature babies	Cerebral Palsy incidence worldwide
1.7 per 1000 ages birth-19	Type 1 Diabetes diagnosis rate

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### Odds Of A Child Using Donor (Allogeneic, Includes Siblings) Cord Blood Stem Cells

Odds	Indication
1 in 2,500	Stem cell transplant by the age of 20 in the USA
1 in 2,000	Thalassemia births in all of India, up to 10% of children have Thalassemia in some castes
1 in 500	Cerebral Palsy among full term births (donor stem cell therapy available in S.Korea)
1 in 4 premies under 1.5Kg	Premature lungs (BDP)
1 in in 10 adolescents	Torn knee cartilage incidence (stem cell therapy approved in S. Korea, now in clinical trials in the US)
1.7 per 1000 ages birth-19	Type 1 Diabetes diagnosis rate (donor stem cell therapy available in China)

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#### Legends

Purple boxes	Standard therapies
White boxes	Clinical Trials