

Standard Therapies

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In our bodies, bone marrow is the source of all blood cells. Haematopoietic stem cells are contained in the bone marrow and they continuously make new blood cells to replace old ones. If bone marrow is damaged by disease or medication, it cannot make these essential blood cells, leading to fatal consequences. Therefore, haematopoietic stem cells must be replaced as part of the treatment. This is done via whole bone marrow transplant or stem cell transplant. Cord blood is an alternative source of stem cell for a transplant.

Below is a list of several diseases (but is by no means exhaustive) for which haematopoietic stem cell transplants are standard treatment. For some diseases they are the only therapy and for others, they are employed when front-line therapies have failed or the disease is very aggressive:

Leukaemia

Acute and Chronic (Leukaemia is a cancer of the blood immune system, whose cells are called leukocytes or white blood cells)

Myelodysplastic Syndromes

(Myelodysplasia is sometimes called pre-leukaemia)

Lymphomas

(Lymphoma is a cancer of the white blood cells that circulate in the blood and lymph vessels) such as Hodgkin's Lymphoma or Non-Hodgkin's Lymphoma

Anaemia

(deficiencies or malformations of red blood cells that are inherited or acquired diseases)

- Severe aplastic anaemia
- Sickle cell anaemia
- Thalassaemia
- Fanconi's anaemia

(Note: the first cord blood transplant in 1988 was for this disease)

- Paroxysmal Nocturnal Hemoglobinuria (PNH)
- Pancytopenia

Inherited Platelet Abnormalities

(Platelets are small blood cells needed for clotting)

- Amegakaryocytosis / Congenital Thrombocytopenia

Myeloproliferative Disorders

- Acute myelofibrosis
- Polycythemia rubra vera
- Essential thrombocythaemia

Inherited Immune System Disorders

- Severe combined immunodeficiency (SCID)
- Other inherited immune system disorders e.g. Di George syndrome, Kostman syndrome, haemophagocytic lymphohistiocytosis etc.

Metabolic Disorders

- Adrenoleukodystrophy
- Gaucher's disease
- Krabbe disease
- Gunther disease
- Hurler syndrome
- Hunter syndrome
- Neimann-Pick syndrome
- Tay-Sachs disease
- Lesch-Nyhan syndrome

Cancers in the bone marrow

(Plasma Cell disorders)

- Multiple myeloma
- Waldenstrom's macroglobulinemia
- Plasma cell leukaemia

Other cancers

(Not originating in the bone marrow or blood system)

- Neuroblastoma
- Retinoblastoma
- Nephroblastoma