

# Difference Between Myeloid and Lymphoid Cells

[www.differencebetween.com](http://www.differencebetween.com)

## Key Difference – Myeloid vs Lymphoid Cells

The [bone marrow](#) gives birth to different cells which are engaged in defense mechanisms of the body. Hematopoietic stem cells (hemocytoblasts) are the key cells produced in the bone marrow. Hematopoietic stem cells produce all other blood cells. The process of producing all blood cellular components from hematopoietic stem cell is known as [hematopoiesis](#). Hematopoietic stem cells generate two lineages of blood cells known as myeloid cells and lymphoid lineage. Myeloid lineage cells include megakaryocytes, [granulocytes](#), erythrocytes, [macrophages](#), etc. Lymphoid lineage cells include [lymphocytes](#) ([T lymphocytes](#) and [B lymphocytes](#)) and [natural killer cells](#). **Lymphoid stem cells give rise to lymphocytes, which specifically identify foreign molecules and cells. The myeloid stem cells give rise to all other blood cells, including red blood cells.** This is the key difference between myeloid and lymphoid cells.

## What are Myeloid Cells?

Myeloid cells are a type of daughter cells produced by hematopoietic stem cells. Myeloid cells are progenitor cells of different types of cells. They produce many different types of blood cells including [monocytes](#), [macrophages](#), [neutrophils](#), [basophils](#), [eosinophils](#), erythrocytes, dendritic cells, megakaryocytes, and [platelets](#). Myeloid cells originate in bone marrows. They act quickly to kill foreign particles which can infect the body and alert the lymphoid cells for further defense mechanisms.

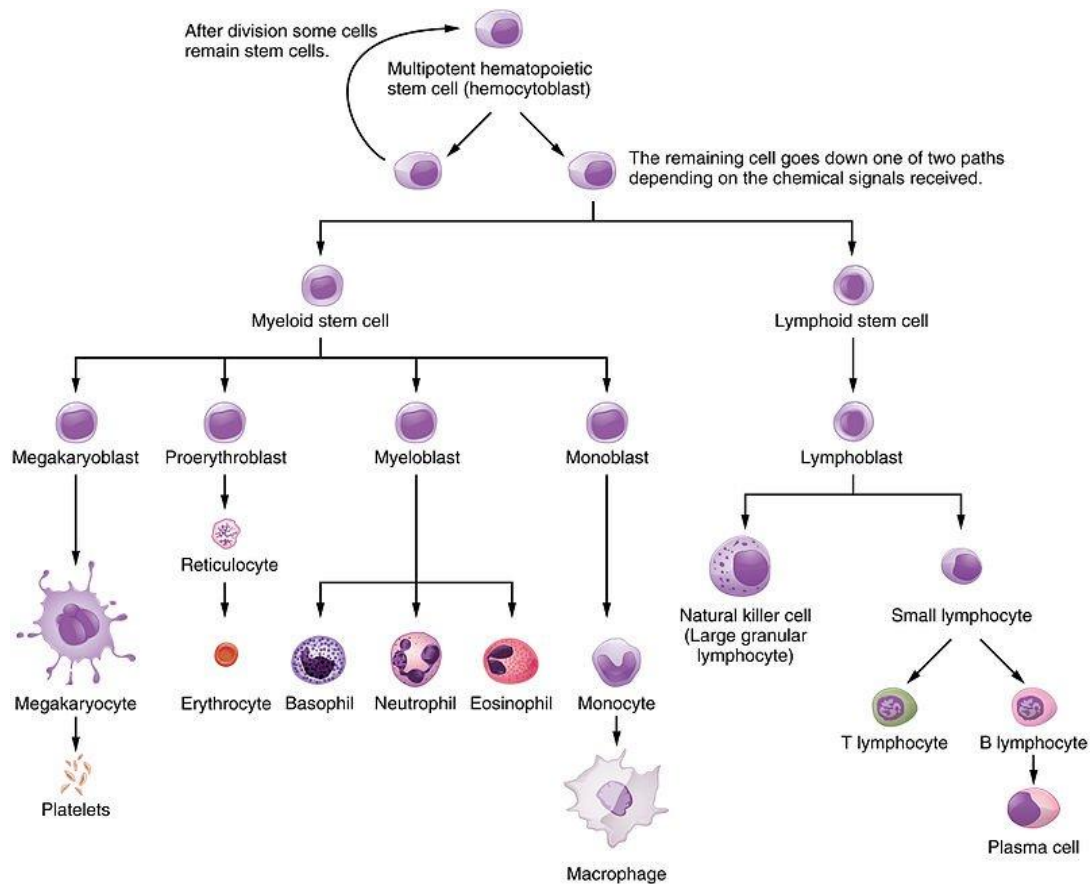


Figure 01: Myeloid Cells

Monocytes are the largest type of white blood cells found in the [immune system](#). Neutrophils are the most abundant white blood cell type found in the blood stream. Macrophages are a type of white blood cells that eat cellular debris, foreign substances, microbes, cancer cells and anything else that does not belong to a healthy body. [Mast cells](#) and basophils are white blood cells that are involved in [allergic reactions](#). They contain granules filled with heparin and histamine. Erythrocytes are red blood cells which transport oxygen and carbon dioxide to and from the tissues. Dendritic cells are a type of white blood cells which are popular as antigen presenting cells. Eosinophils are white blood cells that play an important role in the body's response to allergic reactions, [asthma](#), and parasitic infections. Platelets are small colourless disc-shaped cell fragments found in the blood that are important in blood clotting.

## What are Lymphoid Cells?

Lymphoid stem cells are produced by hematopoietic stem cells. Lymphoid cells are the daughter cells of lymphoid stem cells. Lymphoid cells move around the

body in the lymph and act more slowly to kill infections specifically. Lymphoid cells produce three main immune cells named T lymphocytes, B lymphocytes, and natural killer cells. Natural killer cells recognize and destroy altered cells or cells that have been infected by viruses. B cells produce antibodies which work on bacteria and viruses and neutralize them. There are two types of T cells. One type of T cells produce cytokines that induce the immune response and the second type produces granules that are responsible for the death of infected cells. Lymphocytes, mainly T and B cells produce memory cells which provide long lasting immunity against that specific pathogen.

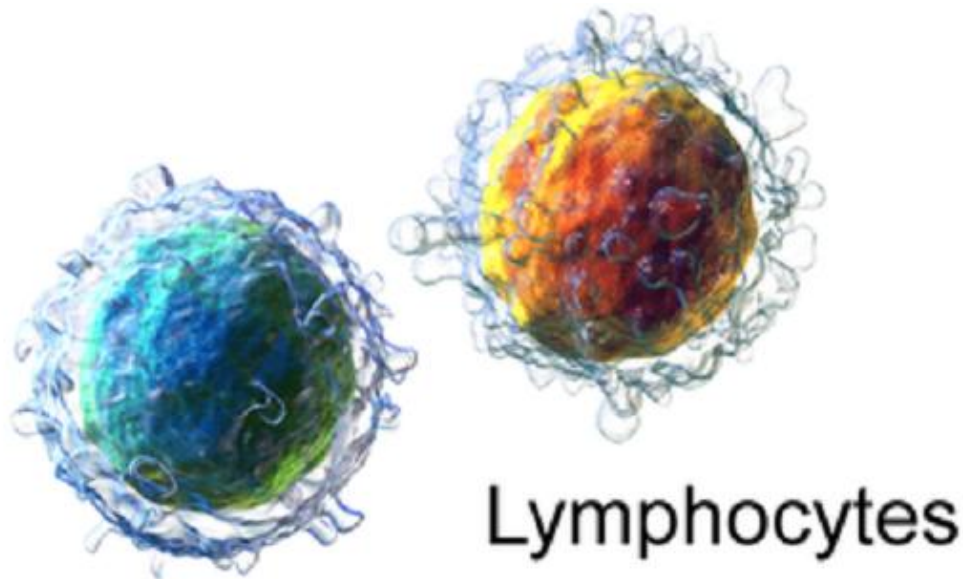


Figure 02: Lymphocytes

## **What are the similarities between Myeloid and Lymphoid Cells?**

- Myeloid and lymphoid cells are progenitor cells.
- Both cell types originate from hematopoietic stem cells.
- Both cell types are produced in bone marrows.
- Both cell types produce different types of daughter cells.

## What is the difference between Myeloid and Lymphoid Cells?

Myeloid vs Lymphoid Cells	
Myeloid cells are daughter cells of hematopoietic stem cells which give rise to several other types of blood cells.	Lymphoid cells are daughter cells of hematopoietic stem cells which produce lymphocytes.
Daughter Cells	
Myeloid cells produce monocytes, macrophages, neutrophils, basophils, eosinophils, erythrocytes, dendritic cells, megakaryocyte, and platelets.	Lymphoid cells produce T cells, B cells, and natural killer cells.

### Summary – Myeloid vs Lymphoid Cells

Myeloid and lymphoid cells are daughter cells of hematopoietic stem cells. These two types of cells generate different types of cells which are involved in defense mechanisms of the body. They are progenitor cells. Myeloid progenitor cells give rise erythrocytes, macrophages, megakaryocytes, mast cells, etc. Lymphoid progenitor cells give rise to T cells, B cells, and natural killer cells. This is the difference between myeloid and lymphoid cells.

#### References:

1. "Hematopoietic stem cell." Wikipedia. Wikimedia Foundation, 13 July 2017. Web. [Available here.](#) 25 July 2017.
2. Myeloid cell differentiation and macrophage function. N.p., n.d. Web. [Available here.](#) 25 July 2017.

### Image Courtesy:

1. “2204 The Hematopoietic System of the Bone Marrow new” By OpenStax College – Anatomy & Physiology, [Connexions Web site](#). Jun 19, 2013. [\(CC BY 3.0\)](#) via [Commons Wikimedia](#)
2. “Blausen 0909 white blood cells” By “Medical gallery of Blausen Medical 2014”. WikiJournal of Medicine 1 (2). DOI:10.15347/wjm/2014.010. ISSN 2002-4436. – Own work [\(CC BY 3.0\)](#) via [Commons Wikimedia](#)

### How to Cite this Article?

**APA:** Difference Between Myeloid and Lymphoid Cells. (2017, July 31). Retrieved (date), from <http://www.differencebetween.com/difference-between-myeloid-and-vs-lymphoid-cells/>

**MLA:** " Difference Between Myeloid and Lymphoid Cells." Difference Between.Com. 31 July 2017. Web.

**Chicago:** " Difference Between Myeloid and Lymphoid Cells." Difference Between.Com. <http://www.differencebetween.com/difference-between-myeloid-and-vs-lymphoid-cells/> (accessed [date]).



Copyright © 2010-2017 Difference Between. All rights reserved.