



[Request an Appointment](#)
[Log in to Patient Account](#)
[Find a Doctor](#)
[English](#)
[Find a Job](#)
[Give Now](#)
[PATIENT CARE & HEALTH INFO](#)
[DEPARTMENTS & CENTERS](#)
[RESEARCH](#)
[EDUCATION](#)
[FOR MEDICAL PROFESSIONALS](#)
[PRODUCTS & SERVICES](#)
[GIVING TO MAYO CLINIC](#)

## Appointments at Mayo Clinic

Mayo Clinic offers appointments in Arizona, Florida and Minnesota and at Mayo Clinic Health System locations.

[Request Appointment](#)

# Macrocytosis: What causes it?

Products and services



## What causes enlarged red blood cells (macrocytosis)?

Answer From [Ruben A. Mesa, M.D.](#)

Advertisement

Macrocytosis is a term used to describe red blood cells that are larger than normal. It typically causes no signs or symptoms and is usually detected incidentally on routine blood tests.

Macrocytosis isn't a specific disease, but it may indicate an underlying problem that requires medical evaluation. Common causes of macrocytosis include:

- Vitamin B-12 deficiency
- Folate deficiency
- Liver disease
- Alcoholism
- Hypothyroidism
- A side effect of certain medications, such as those used to treat cancer, seizures and autoimmune disorders
- Increased red blood cell production by the bone marrow (regeneration) to correct anemia, for example, after blood loss

If you have macrocytosis, blood tests can help determine its cause. In some cases, it may be necessary to remove a sample of your bone marrow — the spongy tissue inside your bones — for testing (bone marrow biopsy and aspiration).

Treatment of macrocytosis, if needed, is directed at the underlying cause. In the case of vitamin B-12 or folate deficiency, treatment may include diet modification and dietary supplements or injections. If macrocytosis is caused by severe anemia, a blood transfusion might be necessary.

With

[Ruben A. Mesa, M.D.](#)

Mayo Clinic does not endorse companies or products. Advertising revenue supports our not-for-profit mission.

**Advertising & Sponsorship**

[Policy](#) | [Opportunities](#) | [Ad Choices](#)

**Mayo Clinic Marketplace**