The Blood Project

UNDERSTANDING ANEMIA OF INFLAMMATION

A brief guide for patients with anemia related to inflammation

Anemia of inflammation is a common reason for a low hemoglobin level. It occurs when the body is responding to illness or inflammation and temporarily changes how it handles **iron** and **red blood cell production**. This condition is usually **mild**, **stable**, and improves as the **underlying problem improves**. It is **not a disease of the blood itself**.

What is anemia of inflammation?

Anemia of inflammation occurs when the body **slows red blood cell production** during periods of inflammation.

Iron is still present in the body, often in **normal or even increased amounts**, but it **is not available to the bone marrow** where red blood cells are made. As a result, **hemoglobin levels usually fall modestly** rather than to very low levels, leading to anemia.

This pattern is sometimes called **functional iron deficiency**, meaning iron is present but **temporarily unavailable**, rather than truly missing.

Why does it happen?

Inflammation changes how the body prioritizes resources.

When the immune system is active, iron is **held back from circulation**, and red blood cell production **slows**. This is a **coordinated response**, not a failure of the bone marrow.

Inflammation can come from many causes, including **infections**, **autoimmune diseases**, **cancer**, **chronic medical conditions**, **inflammatory bowel disease**, **recent surgery or trauma**, or other inflammatory states.

How is this different from iron deficiency anemia?

Anemia of inflammation and **iron deficiency anemia** are not the same.

In **iron deficiency anemia**, iron stores are **depleted**, and iron replacement is essential.

In **anemia of inflammation**, iron stores are usually **adequate**, but iron is **temporarily unavailable**.

Because of this difference, treatments that work well for iron deficiency anemia, such as **oral iron supplements**, are often **much less effective** in anemia of inflammation.

In some people, **both conditions can occur at the same time**. Your doctor interprets blood tests carefully to determine whether **true iron deficiency** is also present.

Does it cause symptoms?

Sometimes.

Many people have **few or no symptoms**. Others may notice **fatigue**, **reduced stamina**, or **shortness of breath with exertion**.

How a person feels often reflects the **underlying illness or inflammation** as much as the anemia itself.

Is it dangerous?

For **most people**, anemia of inflammation is **not dangerous**.

It is usually **mild to moderate** and tends to **level off** rather than continue to worsen. **Severe drops in hemoglobin** are uncommon unless another condition is also present.
If anemia becomes more severe or changes quickly, doctors look for **additional causes** such as **bleeding**, **true iron deficiency**, **kidney disease**, **medication effects**, or **other blood disorders**.

How is it evaluated?

Doctors diagnose anemia of inflammation by looking at **patterns**, rather than a single lab value.
Evaluation often includes:

- **hemoglobin and red blood cell indices**
- **ferritin and other iron studies**, which may look confusing at first
- **markers of inflammation**
- **trends over time**, rather than one isolated result

Medical history and the presence of an **inflammatory condition** are essential parts of the diagnosis.

How is it treated?

Treatment focuses on the **underlying inflammatory condition**.
As inflammation improves, **hemoglobin levels often rise gradually** over **weeks to months**.
Oral iron supplements are usually **not helpful**, because iron is already present but temporarily unavailable. **Intravenous iron** is not routinely used and may be **avoided during active infection**.
In **selected situations**, such as certain **kidney** or **cancer-related conditions**, medications that stimulate red blood cell production may be considered, but these are **not standard treatments** for uncomplicated anemia of inflammation.

When should I contact my doctor?

You should contact your doctor if **symptoms worsen**, if **new symptoms develop**, or if anemia does **not improve over time**.
Reach out promptly if you notice:

- **increasing fatigue or shortness of breath**
- **dizziness or reduced exercise tolerance**
- **hemoglobin levels continuing to fall**

Seek **urgent medical care** if you develop **chest pain**, **severe shortness of breath at rest**, or feel like you **might faint**.

What is the usual plan going forward?

Doctors usually monitor **hemoglobin** and **inflammatory markers** over time.
The goal is to ensure the anemia remains **stable**, symptoms are **manageable**, and the **underlying condition** is being addressed. **Mild anemia may persist** while inflammation is active and often improves as inflammation settles.

Key points to remember

- **common and usually mild:** anemia of inflammation is frequently seen and rarely severe
- **not a blood disease:** it reflects a response to inflammation elsewhere in the body
- **iron is present:** iron stores exist but are temporarily unavailable
- **treat the cause:** managing the underlying condition is the main approach
- **often improves over time:** hemoglobin levels typically rise as inflammation settles