

# Information Handout

Provided by the National Anemia Action Council, Inc., a nonprofit corporation.



## Anemia & Critical Illness

### What is anemia?

Anemia is a below-normal level of hemoglobin\* or hematocrit\*. Hemoglobin is the protein in red blood cells that carries oxygen to all parts of the body. Anemia can be a temporary condition, a consequence of other health conditions, or it can be a chronic problem. People with mild anemia may not have any symptoms or may have only mild symptoms. People with severe anemia may have problems carrying out routine activities and can feel tired or experience shortness of breath with activity.<sup>1</sup>

### How common is anemia in the critically ill?

About half of all patients who stay in the intensive care unit (ICU) for more than three days have anemia.<sup>2</sup> As length of stay increases, anemia may occur in over three-fourths of critically ill patients in the hospital.<sup>3,4</sup>

### What causes anemia in the critically ill?

Many factors contribute to anemia in the critically ill including trauma, surgical blood loss, inflammation and nutritional deficiencies.<sup>3-7</sup> Most common in these patients is anemia due to inflammation, of which one-fifth can have iron deficiency anemia or so-called "mixed picture". Still under debate is the best method of treatment of anemia in the critically ill. Most physicians feel prompt attention and treatment is warranted, but conclusive data to prove this is lacking.

### What are the effects of untreated anemia in the critically ill?

Critically ill people with anemia are more likely to develop a severe type of confusion called delirium although little is known about this relationship. Research also suggests critically ill people with heart disease and anemia may have a lower survival rate than people without anemia.<sup>8-11</sup> While managing anemia may be life saving in some circumstances, treatment has not proven to guarantee a longer lifespan.

### How do I know if I have anemia?

The best way to determine if you have anemia is to discuss your blood counts and changes in hemoglobin and hematocrit with your doctor. Symptoms usually develop when anemia is moderate to severe, and can include fatigue, weakness, pale skin, chest pain, dizziness, irritability, numbness or coldness in your hands and feet, trouble breathing, a fast heartbeat, and headache. In any critical illness, it is important to talk with your doctor about changes in your health and understand which problems can be treated and your treatment options.

### What treatments are available to help me?

Data in both adults and children admitted to the ICU shows that most can tolerate their anemia well and be safely treated with red cell growth stimulating agents such as erythropoietin (EPO).<sup>12</sup> Studies have shown that proper EPO dosing can raise hemoglobin levels while requiring fewer blood transfusions.<sup>2</sup> This can reduce or eliminate the risks of blood transfusions which include allergic reaction, infection and poor organ function.<sup>11,4</sup> Some trauma patients and those with severe bleeding episodes benefit from transfusion and drug therapy.

### Glossary

**Blood transfusion:** Transfer of blood or any of its parts to a person

**Delirium:** Confusion, reduced awareness; sometimes hallucinations

**Hematocrit:** Percentage of red blood cells in a blood sample

**Hemoglobin:** Protein carried by red blood cells that transports and delivers oxygen throughout your body

**Inflammation:** Your body's response to injury or irritation; often associated with pain, redness, heat, and/or swelling

**Nutritional deficiency:** Lack or shortage of a necessary vitamin, mineral, or element

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\*Normal Lab Values: Normal hemoglobin >12 g/dL for women, >13 g/dL for men; normal hematocrit >36% for women, >39% for men.

# Anemia & Critical Illness ...Continued

## References

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## NAAC's Online Resources for Patients & Consumers ([www.anemia.org](http://www.anemia.org))

**Information Handouts** – Educational handouts describing anemia caused by different conditions including: aging, cancer, diabetes, vitamin deficiency, chronic kidney disease and more; free print or download access

**Frequently Asked Questions** – Answers to patients' common questions regarding anemia

**Anemia Glossary** – Definitions for medical terms relating to anemia which are used in NAAC's educational material

**Feature Articles** – Short articles covering anemia-related topics for patients, caregivers and allied healthcare providers

**Anemia Watch** – Our free quarterly e-newsletter covering current anemia-related topics and news

**Anemia Symptoms Quiz** – Printable questionnaire to fill out and take to a physician

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