

Information Handout

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



Anemia & Surgery

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.¹

How common is anemia in surgery patients?

Studies have shown anemia is present in 56% of patients before surgery (depending on the type of problem they are having surgery for and their overall health).¹ After surgery, anemia is even more common, affecting 90% of patients.^{2,3}

What causes anemia in surgery patients?

Anemia may be present before surgery, especially in people who have cancer, or other chronic diseases. A major cause is the inflammation associated with these conditions. Inflamed tissues secrete small proteins that have effects on iron metabolism, bone marrow, and erythropoietin production by the kidneys (a hormone that controls production of red blood cells). Because hemoglobin is carried by red cells, when there are not enough red cells, hemoglobin is not able to deliver enough oxygen to your body's organs.^{2,3} Another cause of anemia before surgery is low levels of iron due to internal bleeding. Bleeding episodes and drawing blood for frequent blood tests can also contribute to anemia after surgery.¹

What are the effects of untreated anemia in surgery patients?

Anemia after surgery has been linked to a higher risk of infection, a longer need for breathing assistance with a ventilator, and higher death rates than seen in people who do not have anemia after surgery.^{4,5-7} Patients who have anemia before surgery, are more likely to need blood transfusions, have long hospital stays, and die during or after surgery than those who do not have anemia.^{5,8-10} Appropriate management of anemia may be life saving in some circumstances and these findings suggest that your anemia should be treated before elective surgery.

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. It is important to see your doctor on a regular basis in order to be tested for possible anemia.

What treatments are available to help me?

Medications that stimulate the production of red blood cells have been approved to correct pre-surgery anemia and have been shown to reduce transfusions in anemic patients whose surgery involves large amounts of blood loss. These medications are most effective when given three to four weeks before surgery, so it is important to know if you are anemic as soon as possible. Close communication with your doctor will help him or her provide the treatment that is best for you based on what is causing the anemia.

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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 & Surgery ...Continued

Glossary

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

Bone marrow: Soft, spongy tissue found in bone cavities; responsible for production and storage of most blood cells, as well as storage of iron

Erythropoietin: Hormone that regulates red blood cell production

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

Iron metabolism: Body's process of handling iron

Ventilator: Machine that breathes for a person when their lungs cannot work properly

References

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NAAC's Online Resources for Patients & Consumers (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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