Information Handout

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

Vitamin Deficiency Anemia

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 vitamin deficiency anemia?

These problems are most common in older adults, particularly those who have lost interest in eating and live on "tea and toast" or other restricted diets. One study showed that 13% of adults ages 65 to 100 have vitamin B_{12} deficiency.[2] Another study found that 5% of healthy older adults have low folate.[3] Vegetarians may also be prone to vitamin B_{12} deficiency due to the lack of meat in their diet.

What causes vitamin deficiency anemia?

Folate, vitamin B_6, and vitamin B_{12} are essential for the body to produce healthy red blood cells. Not having enough of one or more of these vitamins may cause anemia.

Vitamin B6 deficiency is often caused by not eating enough foods that contain B_6. Good sources of vitamin B_6 include meat, liver, cereal grains, bananas, and nuts. Certain medications can also cause vitamin B_6 deficiency.[4]

Vitamin B12 deficiency develops when your body is not able to absorb this vitamin. This can be caused by medications, stomach or bowel surgery, and certain diseases. Sometimes vitamin B_{12} deficiency occurs in strict vegetarians and people who eat less meat, eggs or milk.[5] In older people, the most common cause of vitamin B_{12} deficiency is when their bodies do not make enough acidic gastric juice to release the B_{12} from the food you eat. This is known as achlorhydria.

Folate deficiency is often caused by an unbalanced diet that does not include enough fresh fruits and green, leafy vegetables. Other common causes of folate deficiency are pregnancy, breastfeeding, alcohol abuse, and growth spurts.[5]

What are the effects of untreated vitamin deficiency anemia?

Long-lasting deficiency of vitamin B_6, folate, or vitamin B_{12} can result in anemia. With folate and vitamin B_{12} deficiency, anemia often causes symptoms such as fatigue, poor appetite, weight loss, and diarrhea.[4] The earliest symptoms of vitamin B_{12} deficiency may be weakness, poor coordination, and numbness or a "pins and needles" feeling in the hands and feet. Mild irritability and forgetfulness are other early signs. A severe untreated deficiency can result in serious damage to the nerves, spinal cord, and brain.[5]

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?

Several medications are approved to help correct anemia, and in certain cases mild anemia due to vitamin deficiencies may be corrected with a change in diet. Folate deficiency in pregnant women can cause serious birth defects, and many processed foods are fortified with folic acid, the manufactured form of naturally-occurring folate. 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.

Glossary

Achlorhydria: Low level of the acidic gastric juice that is needed to extract vitamins
Folate: A type of vitamin
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

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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.*

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Vitamin Deficiency Anemia *...Continued*

References

1. National Anemia Action Council. Anemia: A Hidden Epidemic. Los Angeles, CA: HealthVizion Communications, Inc; 2002.
2. Rajan S, et al. J Am Geriatr Soc. 2002;50:624-630.
3. Joosten E, et al. Am J Clin Nutr. 1993;58:468-476.
4. Office of Dietary Supplements, NIH. Dietary supplement Fact Sheet. Available at: ods.od.nih.gov.
5. Babior BM, Bunn HF. Megaloblastic anemias. Available at: www.harrisonspractice.com.

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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