

# My Anemia Starter Kit



**HELLO! My name is C.R. Hume.** I am the Iron Disorders Institute mascot. Today I am introducing you to ANEMIA

**Anemia is not a complete diagnosis; it is a symptom** just like a headache or stomach ache. It is terribly important that you **do not run to the store** for iron pills without first reading about ANEMIA.

## What is Anemia?

Anemia is when you do not have enough red blood cells, which is a symptom caused by any number of reasons.

## Most at Risk

Women of childbearing age, children and the elderly

You might be told that you are anemic

...because of some bloodwork results--generally it is because you have a low hemoglobin. You could also have a low red blood cell count or a low ferritin. A **low serum ferritin** with a **normal hemoglobin** is called "iron deficiency **without** anemia". A **low hemoglobin** with a **low ferritin** is called "iron deficiency **with** anemia".

Or you might think that you are anemic because of signs or symptoms:

- Weakness or fatigue
- Shortness of breath
- Dizziness
- Pallor (pale skin, pale inside of cheeks, eyelids,
- blue sclera ("whites of eyes" have a bluish tint)
- Rapid or irregular heartbeat
- Sore tongue
- Fingernail abnormalities (spooning, ridges, blue-colored nail beds)
- Malaise (general feeling of being unwell)
- Headaches
- Pica (craving non-food items such as ice, dirt, hair, sucking on coins or metal objects)
- Restless Legs Syndrome (RLS)
- Sensitivity to cold



## Did you know?

Younger men are the least likely to become iron deficient. Read more and find out why....



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# My Anemia Starter Kit—Step Two

## Finding out the cause of your anemia

Never try to treat anemia without knowing the cause and without the help of a medical expert. Part of the process in determining the cause of your anemia is to gather information such as a physical examination, previous blood work, family history and to consider your symptoms. Diagnostic tests or procedures may be needed to rule out reasons.

Iron Deficiency is a  
result of increased  
demand for iron or  
decreased intake or  
absorption of iron

**Selection of REASONS** for increased demand, decreased intake or absorption of iron

**Blood loss** due to heavy periods, childbirth, digestive tract disease (hemoroids, cancer, diverticulosis, esophageal varices), surgery, injury

**Rapid growth** and development during pregnancy, infancy, adolescence (puberty)

**Nutritional deficiencies** such as vitamin C, B12, folate or zinc and iron. likely from not eating enough red meat, which contains heme iron—the form most easily absorbed by the body.

**Medications, supplements or substances** that cause bleeding or interfere with iron absorption such as: aspirin, proton pump inhibitors (to treat acid reflux), calcium supplements, coffee, tea, chocolate, eggs, and fiber.

**Conditions that interfere** with intake or absorption such as: not enough stomach acid, lack of intrinsic factor (hormone needed to absorb vitamin B12); celiac disease, Crohn's-colitis; hypothyroidism, eating disorders (chronic vomiting), gastric banding or surgical removal of the stomach, small intestine (short bowel syndrome)

**Poisoning:** lead, toxic chemicals, alcohol abuse

**Inflammatory conditions** such as infection, autoimmune disease, thyroid disease, arthritis, diabetes, digestive tract disease

**Bone marrow abnormalities:** blood cell formation or production problems

**Chronic or abnormal red blood cell destruction** problems (hemolysis)

**Rare diseases** of the blood, heme synthesis enzyme or transport protein deficiencies

# My Anemia Starter Kit—Step Three

## Tests, procedures and different doctors

### SOME ROUTINE TESTS YOUR DOCTOR MIGHT ORDER INCLUDE:

- complete blood count (CBC)
- iron panel (fasting serum iron, serum ferritin, TIBC or UIBC)

### OTHER TESTS MAY BE NEEDED

- to detect or evaluate immune function, inherited conditions, organ function, hormone levels
- infection, absorption, issues, blood cell formation or blood cell destruction, environmental factors, deficiencies in certain nutrients, enzyme or binding-transport protein abnormalities.

### SOME PROCEDURES YOUR DOCTOR MIGHT ORDER:

- bone marrow aspiration (biopsy)
- organ biopsy
- scopes (colonoscopy, endoscope)
- scans: MRI, CT, PET, ultrasound

Tests and procedures used are not limited to the ones listed here.

A medical professional will guide you on this critical step to investigate the reason(s) for your anemia. Most healthcare providers can diagnose and treat the common causes of anemia. If the cause is complicated, then you will see a specialist who will order tests and procedures. Specialists could include a

- hematologist-oncologist (cancer/blood diseases)
- gastroenterologist (digestive diseases)
- internist (diagnostics)
- OB-GYN (pregnancy or female issues)
- rheumatologist (bone and joint disease)
- endocrinologist (hormones)
- infectious disease expert (infection)
- urologist (bladder or kidney disease)
- geneticist (DNA and counseling)
- a surgeon (general or organ specific)

NOTE: children will likely be referred to specialists who are trained in pediatrics

### NOTES:

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# My Anemia Starter Kit—Step Four

## Curing your anemia

Curing anemia might be straightforward as changing your diet or taking supplemental iron. Or, the cure may be complicated involving iron injections or infusions or blood transfusions. You may also need medications such as iron chelators, red blood cell boosters (erythropoietin)—regardless of your therapy, a trained medical professional must oversee treatment and disease management.

**WARNING:** You should never take iron pills without first having the tests that confirm iron deficiency.

Below are some states of anemia that you might experience and the iron panel profile:

**Iron deficiency anemia:** hemoglobin, TS%\* and serum ferritin are all below normal. Depending on the underlying cause and whatever treatment is needed to address it, this condition is usually corrected with increased lean red meat to the diet or supplemental iron (ferrous sulfate or heme-based pills) and diet changes. More severe cases may require iron infusions. Levels should be monitored and checked in 3-6 weeks depending on the physician's recommendation.

**Iron deficiency without anemia:** TS% and serum ferritin are below normal but hemoglobin is normal. Depending on the underlying cause and whatever treatment is needed to address it, this condition is usually corrected in the same way as iron deficiency anemia.

**Iron avidity:** hemoglobin can be normal or low, serum ferritin on the low normal or low side and TS% elevated (normal TS% is 25-35%). Depending on the underlying cause and whatever treatment is needed to address it, this condition is usually corrected in the same way as iron deficiency anemia.

\*TS% =transferrin-iron saturation percentage; this is a calculation derived by dividing TIBC (total iron binding capacity) into serum iron and multiplying the results by 100%. TS% tells you how much iron is in transport to the bone marrow, liver or ferritin.

**Iron Overload with anemia:** hemoglobin is low, TS% and serum ferritin are elevated. This is a complicated condition which cannot be corrected by simply taking iron pills or changing the diet, although these may be included in the therapy. The cause of anemia could be due to an inherited blood disease or condition, such as, sickle cell or thalassemia; enzymopathies; autiomiome disease; sideroblastic anemia; myelodysplastic syndromes; aplastic anemia or stem cell disorders.

The disease itself or the treatment (blood transfusion, iron infusion) may be the source of the iron overload. Generally, iron chelators (oral or infused) are used to treat the combination of iron overload with anemia. Sometimes, HrEPO (human recombinant erythropoietin) is used to boost red blood cell production and hemoglobin/hematocrit so that a therapeutic phlebotomy may be performed. A medical professional will make this determination based on your condition and set of circumstances.

Your diet should include plenty of fluids, fresh fruits and vegetables and fiber. Below are some foods and substances that interfere with or increase iron absorption. Talk with your healthcare provider about diet by sharing information provided in your starter kit.

### FOODS THAT INTERFERE WITH IRON ABSORPTION

- TANNIN: IN COFFEE, TEA
- PHYTATES: FIBER
- DAIRY PRODUCTS
- EGGS
- CHOCOLATE
- CALCIUM SUPPLEMENTS IF CALCIUM IS RECOMMENDED BY YOUR DOCTOR, TAKE IT AT BEDTIME AND AT LEAST TWO HOURS AFTER YOUR MEAL

### AVOID

- SUGARS, ANIMAL FATS AND
- ALCOHOLIC BEVERAGES
- THESE FOODS AND SUBSTANCES EFFECT IRON BALANCE AND CAN TRIGGER FREE RADICAL ACTIVITY WHICH IS HARMFUL

### FOODS THAT INCREASE IRON ABSORPTION

- VITAMIN C
- FOODS HIGH IN BETA CAROTENE
- AVOID
- SUGARS, ANIMAL FATS AND
- ALCOHOLIC BEVERAGES
- THESE FOODS AND SUBSTANCES EFFECT IRON BALANCE AND CAN TRIGGER FREE RADICAL ACTIVITY WHICH IS HARMFUL TO CELLS OF THE BODY.

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