Anemia is a condition in which the body is lacking sufficient red blood cells. Pallor describes the color of the skin of anemic persons. Anemia may be the consequence of failure of the process of production, of an abnormal destruction of blood cells, or of blood loss occurring at a faster rate than it can be produced—a process that itself may be hindered if iron and other nutrients required for making blood are in short supply.

Red blood cells carry oxygen, a necessary element for all body functions, from the lowest molecular level all the way up to the most complex organ functions. When red cells are deficient and oxygen is lacking, the whole body suffers.

The human body is an amazing engineering wonder. The systems regulating the production, function and containment of our blood are no less phenomenal. Our blood is composed of red
blood cells whose primary function is to carry oxygen and carbon dioxide—white blood cells whose function is to protect us from hostile invasion; platelets, particles that are active in preventing blood loss—and serum, the liquid part that works to transport nutrients, hormones, and all manner of good and bad chemicals and waste to and from our body’s cells. The Holy Scriptures tell us that “the life is in the blood.” The cellular elements of the blood (red and white cells and platelets) are produced in the bone marrow that in turn work closely with a number of other organs (spleen, liver, thymus gland, lymph nodes, tonsils, etc.) to guarantee efficient fulfillment of the many roles designed for the blood to accomplish. Once produced, there are a number of other mechanisms involved in maintaining optimum levels of the various blood components and in containing the blood within the vessels and organs designed for that purpose. In this discussion we are concerned with those mechanisms that prevent undue loss of this precious commodity.

When one sustains a major wound, a whole series of processes go into action; governed by built-in checks and balances under the ultimate control of the brain and the sustaining power of God. Blood vessels immediately go into spasm so as to impede the flow. Platelets become activated and form plugs with fibrin networks while simultaneously putting out a distress call for further help. The distress call then triggers a whole series of chemical events which we recognize as coagulation—turning the liquid blood into a thickened gel that no longer can escape through the injured wounds of the vessels. When our bodies are healthy, these processes work well and life often goes on even in spite of major wounds. The design is good.

1. Symptoms of anemia

Lack of oxygen due to anemia may cause weakness, reduced physical endurance, heart palpitations, shortness of breath, pallor, headaches, and many other non-specific symptoms.

2. Causes of anemia

Bleeding will cause anemia if the loss of blood is more rapid than one’s ability to regenerate it. All bleeding is abnormal except as occurs during menstruation and childbirth. A healthy body is well able to compensate for this blood loss. Excessive loss, as occurs with heavy menses or frequent pregnancies, may lead to anemia.
Nutritional deficiencies may interfere with the body’s ability to regenerate blood cells. Iron and B complex vitamins are the most common deficiencies leading to anemia, but many other deficiencies may also contribute. **(Note:** Vitamin B12 and vitamin A deficiencies are common in young children of Africa, and, perhaps, other developing nations.)

Ingestion of clay, starch, ice, and other items are a common cause of anemia among some cultures.

Chronic infections (including HIV) can interfere with one’s ability to make blood cells.

Malaria, hookworm, and other parasitic infections destroy blood cells and often cause anemia.

Many toxins may interfere with the bone marrow’s capacity to make blood; lead is a common one.

A number of conditions—inherited disorders, reactions to medications, and a number of diseases may destroy blood cells faster than they can be replaced.

At other times, inherited disorders, medications, chemicals, etc., interfere with bone marrow production of blood cells.

Injuries may cause sufficient blood loss to result in anemia.

Chronic blood loss as occurs with bleeding hemorrhoids, ulcers, inflammation of the bowels, and various cancers, often leads to anemia.

Failure of the coagulation system may also lead to blood loss and anemia. Sometimes this is because of nutritional deficiencies—sometimes because of inherited or acquired defects,
medications or chemicals, or malfunction of the liver and organs of origin.

So it is, that at any point from the beginning of production of the blood elements in the bone marrow throughout the whole process of stopping the “flood,” things may go wrong that may end in disaster. It is easy to see that no single remedy is going to solve all of our anemia problems.

3. Checking for blood loss

Successful treatment of anemia must first identify the cause. For example, vitamins and iron may enhance the body's ability to replace blood cells destroyed by the malaria parasite, but will not eliminate the parasite that is causing the problem.

Sometimes the cause is obvious. One who eats starch or chews on ice all day long, or one who has hemorrhoids that fill the toilet with blood every day are pretty evident. Often, diagnostic studies will be necessary to identify the cause and to recommend treatment.

Even if the cause is not obvious or discoverable with the facilities at hand, one may treat based upon the most likely cause:

Consider the amount of blood loss during menstruation and frequency of pregnancy.

Check for blood loss from the bowels. Rapid bleeding from the esophagus and stomach often turns the stool color black. Rapid bleeding from the intestines will be burgundy or red in color. Chemical tests may reveal the presence of blood in the fecal matter if there is slow bleeding into the gut. These may be available from the pharmacist or a physician.

Bleeding from the urinary system is usually obvious by observing the color of the urine.
When anemia is accompanied by other signs of illness i.e., chronic or productive cough, weight loss, fever, chills, or sweats; one must suspect some infection or malignant process as a contributing factor to the anemia.

4. Treatment of anemia

Treat malaria and other diseases prevalent in the area as is appropriate (Section IV, chapter 5, D).

Application of the HEALTH SMART principles is an excellent place to begin when planning a treatment regimen for anemia (Section VI, chapters 1–10).

Moderate exercise—preferably out-of-doors in the sunlight and fresh air.

Generous use of pure drinking water.

Elimination of all junk foods.

Elimination of all forms of alcohol, tobacco, caffeine, and other drugs.

Natural nutritional supplements, juice, herbs, etc., may be helpful.

Most all types of anemia will be improved by careful attention to lifestyle. Sometimes it is appropriate to use vitamins, minerals, and other supplements without a clear indication of deficiency when other measures have failed to resolve the anemia. Vitamin C, bioflavinoids, vitamin A, and other plant substances are sometimes effective in treating illnesses due to fragile
blood vessels. Vitamin B12 may be deficient among vegetarians (and frequently those who eat animal products); a fact that must always be considered.

Supplemental vitamin K may be valuable in persons on severely restricted diets or with liver disease.

Iron supplement is valuable for iron deficiency anemia; i.e., women with heavy periods and poor nutrition, children on iron deficient diets, persons who have lost significant amounts of blood by surgery or injury, etc.

Replacement of iron may be made from plant sources; grape juice, prune juice, and molasses are rich sources. Contrary to common knowledge, meat—unless heavily saturated with blood, is not necessarily the best source of iron. (Muscle tissue has little iron.)

If blood loss has been high and rapid replacement is needed, inorganic salts may be the fastest way to go. Iron salts (pills) are quite irritating to the gastrointestinal tract; therefore dosage should be started low and gradually increased. Iron is absorbed better if given with vitamin C.

People who have developed the practice of eating ice, clay, starch, etc., must stop the practice.

Nose bleeds, especially in children are often the result of dryness of the nose and picking at the crusts that build up. Petroleum or similar agents to protect membranes from drying out may be a useful interim aid. Treatment of associated allergies and malnutrition will be an essential part of solving this problem.

Chronic blood loss from hemorrhoids or other obvious sources need treatment of the original problem (Section III, chapter 5, C).

Infections, frequent pregnancies, abortions, and stress are major contributors to menstrual problems and need appropriate management.
Stress management may also be helpful in managing irregular and heavy periods (Section V, chapter 12).

Many medications predispose to bleeding. The usual arthritis medications are among the worst offenders. Efforts to eliminate problem-causing medications are certainly in order and should be done with the help of the prescribing physician.

5. Indications for professional help

Any unexplained anemia, or anemia that fails to respond rapidly to nutritional and supplemental therapy, warrants evaluation and a search for the cause, followed by proper therapy.

Blood noted in the urine, (except women during menses); in sputum coughed up from the lungs; from the digestive tract as red blood or black, tarry, foul-smelling stools, or from other internal regions needs further evaluation to identify the source.

Unexplained black and blue spots, whether many or few, need professional evaluation. (If due to medications for arthritis or other, they should clear promptly upon discontinuing the medication.)

Some wounds tend to form excessive granulation tissue (“proud flesh”) while healing and may bleed whenever irritated. Application of caustic substances to shrink these over-zealous blood vessels may allow healing to take place (Section VII, chapter 3, I).

Surgical care is sometimes necessary for adequate control of bleeding due to injury or other acute and chronic causes.

Anemia and blood loss, like all other maladies, are the result of life in a world of sin. Our loving
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God desires the best for all of His children. Learn to depend upon Him to guide you in determining the cause of your illness and in seeking resolution of it. God does hear and answer the prayers of those who trust in Him.

B) Bleeding

Almost everyone has had some experience with bleeding, either from a laceration, a nosebleed, or some other site. One of the marvels of creation is the fact that our blood flows throughout the body carrying oxygen, nutrients, and all kinds of life-giving substances without either leaking out of the vessels or forming clots and blocking them off. And when an injury or accident does cause loss of blood, we have built-in mechanisms to quickly curb the loss. Unfortunately, things can go wrong, and when they do, all sorts of abnormal bleeding and clotting problems may occur.

1. Causes of Bleeding

Acute injuries are undoubtedly the most common cause of serious or life-threatening bleeding.

Recurrent or chronic bleeding may occur from ulcers in the stomach and intestinal tract, the nose, and other sites.

Abnormal blood vessels (varicosities, etc.) and various other abnormalities, birth defects, tumors, etc., can be the source of blood loss.

Abnormalities with red cells, platelets, coagulation factors, and other elements in the blood may cause bleeding.

Diseases of the spleen, liver, bone marrow, kidneys, and other organs that affect bleeding and coagulation systems of the body may cause abnormal bleeding.
The monthly menstrual cycle and childbirth are the only normal sources of bleeding and blood loss.

2. Management of bleeding

Direct pressure is the quickest and safest way to control acute bleeding. Bleeding from nearly all superficial wounds as well as major wounds to the trunk and extremities can be controlled by pressure over the injured vessel. (Injuries inside the skull, the chest, and the abdomen are usually not accessible to apply pressure.)

To stop bleeding, try to identify the site of the bleeding vessel—then using the hand or a roll of gauze, apply firm pressure to the site. (Where large vessels are injured that will need surgical repair, one must apply firm pressure.) Continue holding the pressure until professional help can find the vessel and place occluding instruments on it.

For superficial or less severe injuries, bleeding can usually be controlled with direct pressure over the bleeding site. (Example: nose bleeds—assuming that the body’s systems are all working properly). Most nosebleeds are caused by cracks or ulceration of the lining over the cartilaginous septum between the two sides of the nose and can be easily stopped with pressure.

Tourniquets: Tourniquets may stop the bleeding, but also stop the flow to surrounding tissues with potential long-term injuries to nerves and other tissues. Use only if rapid arterial bleeding cannot be controlled with other means. To use a tourniquet, tie a long piece of cloth, a rope, etc., loosely around the extremity 3–5 inches above the wound. Place a stick through the tourniquet beside the extremity, and gently twist to tighten just until arterial (red) bleeding stops. Loosen at intervals of 20 to 30 minutes for 1–2 minutes.

Cold applications: Application of cold water or ice may constrict the blood vessels, making them narrow or closing them off completely. It is often helpful when used in conjunction with gentle pressure for minor wounds or bleeding sources. (Note: In major trauma, cold may interfere with platelet and coagulation function and thus be harmful. Therefore, people who have suffered...
major injuries need to be kept warm.)

Other agents sometimes useful to stop bleeding:

A number of caustic chemicals will stop minor bleeding. Silver nitrate is one such example (Section VII, chapter 3, I).

Fibrous material, even toilet tissue, applied to superficial wounds, may assist platelets in forming a fibrous network for control of minor bleeding.

Geranium leaves (crushed) can constrict blood vessels.

Tannic acid—as present in dry tea bags and many, many other plant sources—sometimes works very well when applied to a bleeding wound with a bit of pressure.

Lifestyle practices: Many episodes of acute bleeding, recurrent or chronic bleeding, and abnormalities of blood elements are caused by lifestyle related illnesses (Example: Vitamin C and vitamin K deficiency). These may be treated by careful attention to lifestyle practices (Section VI, chapters 1 – 10).

Green leafy vegetables are good food sources of vitamin K.

Citrus fruits and foods high in natural bioflavinoids may improve vessel integrity.

Restoring lost blood: All of the lifestyle practices noted above are valuable for supporting the body as it replaces that which has been lost. Foods high in iron, vitamin C, vitamin B12, and folic acid may give another added boost. Prunes and molasses are excellent sources of Iron when a boost is needed, but there are many other foods that are also high in iron.
Medications containing iron and vitamin C may sometimes be necessary to supplement deficient dietary sources.

3. Indications for professional help

Major trauma: All major injuries involving large or deep blood vessels or large wounds necessitate professional help as soon as possible.

Bleeding from any body opening that does not stop with usual measures is indication for professional help—nosebleeds; recurrent or large volume vomiting of blood; passage of bright red, burgundy, or black, tarry bowel movements; blood or clots in the urine and, in females, uncontrolled vaginal bleeding or excessive bleeding of childbirth.

Failure of superficial or seemingly minor wounds to stop bleeding with usual measures is indication for help.

4. What to do if medical care not available

Other contact agents, if available, that may help to control surface bleeding include cocaine, epinephrine, thrombin, fibrin sealant, and any one of a number of commercially available agents designed just for this cause.

See Section III, chapter 4, U—bleeding from the digestive tract.

See Section II, chapter 5—wound care.
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C) Spleen

The spleen is an organ that is located just in front of and just above the left kidney. It is normally about the size of one’s fist. Its primary function is to recycle used red blood cells (It also has immune functions). After about 120 days in circulation, our red blood cells begin to wear out. The spleen “catches” them as they pass through the vessels in and around the spleen, destroys them, and releases the red pigment (hemoglobin) back into the circulation. Eventually, many of the byproducts of red cell destruction are recycled into new blood cells. The spleen is also a good storage tank for red cells, ever prepared to empty its stores into the circulation if needed for an emergency. Under some circumstances, the spleen manufactures red blood cells and white blood cells, assisting the bone marrow in its job. In another role, infectious agents, bacteria, viruses, parasites (malaria), etc, pass through the spleen where they are snatched up by the white blood cells (tissue macrophages) and destroyed. It is all part of our “natural security system.”

Under certain circumstances the spleen becomes enlarged and symptomatic. We might mention such things as infections with the virus that causes ‘kissing disease” (infectious mononucleosis); parasitic infections of malaria and kala-azar; infections such as tuberculosis, syphilis, bacterial endocarditis, hepatitis, etc.; leukemia and lymphoma tumors; diseases in which the red blood cells have an abnormal shape (spherocytosis, sickle cell disease, etc.), and a number of other conditions. Symptoms consist of fullness and discomfort in the left upper abdomen. Sometimes the spleen is so large as to compress the stomach and interfere with eating. With “kissing disease,” the spleen is not only enlarged, but is often very friable as well and easily ruptured.

Diseased spleens, especially when enlarged, are often associated with premature capture and destruction of some or all of the various blood cells, i.e. red blood cells, white blood cells, and platelets. Loss of red cells causes anemia. Loss of white cells may leave a person very susceptible to infections, and loss of platelets may cause one to bleed abnormally.

Rupture of the spleen is a common complication of trauma, especially sports injuries and automobile accidents. Rupture of the spleen may occur with infectious mononucleosis (kissing disease), and occasionally, it will rupture without known cause. Because of the large amount of blood stored in the spleen and because of the large size of vessels going to and from the spleen, rapid onset of shock often follows rupture of the spleen.
1. Recognition of spleen problems

The spleen is not normally palpable (able to be felt). Only when it is significantly enlarged can one feel it below the ribs on the left side. The following symptoms and signs ought to make one think of the spleen as a problem.

Fullness, pressure, rapid satiety when eating, an enlarging belly, etc., may indicate an enlarging spleen.

Tiredness, palpitations, pallor, easy bleeding and bruising, recurrent infections, etc., may suggest hypersplenism (an enlarged spleen that is destroying blood elements). Check out the size of the spleen, and check the complete blood count and platelet count.

Weakness, fatigue, sore throat, jaundice, and enlarged lymph glands in the neck, under the arms, etc., may suggest infectious mono, hepatitis, and similar diseases.

The spleen should always be considered when looking for the cause of anemia.

2. Treatment of symptoms related to the spleen

**Malaria: Malaria can be prevented and treated (Section IV, chapter 5, D).**

Infectious mononucleosis: This is usually a self-limiting disease. Patients suspected of having infectious mono should follow the *HEALTH SMART* principles and protect the left flank and abdomen from injury.

Bacterial infections are responsive to wise use of hydrotherapy, modern medications, herbs, and health promoting lifestyle practices.
Application of health-promoting lifestyle practices as outlined in HEALTH SMART may enhance the recovery of many other splenic problems as well (Section VI, chapters 1–10).

3. Indication for professional help

Failure to rapidly correct symptoms related to the spleen with simple measures is an indication for professional help.

4. What to do if professional help is not available

Utilize the modalities available to you as described in other places in this book when professional help is unavailable.

Ruptured spleens may cause rapid onset of shock, but usually stop bleeding spontaneously in time. With active support in the management of the rapid blood loss with fluid replacement, etc., most of these patients will survive without surgery. When rupture of the spleen is suspected, the patient should be kept very quiet for 7–10 days, and should not resume normal activity for 6 weeks or more lest bleeding recur.

It is important to diligently apply the HEALTH SMART principles if one would hope to experience full recovery (Section VI, chapters 1–10).