

**abstinence** – the act or practice of refraining from something such as a food or alcohol

**acetaldehyde** – a compound produced in the body from the breakdown of alcohol

**acetaminophen** – an over-the-counter pain reliever; also known by the trade names Tylenol®, Anacin-3®, Datril®, Liquiprin®, Panadol®, Tempra®, and Valadol® and the generic term APAP; acetaminophen is found in many over-the-counter cold and sinus medicines

**activated B cell** – see plasma cell

**acute hepatitis** – a course of hepatitis (liver inflammation) that resolves in six months or less

**adjuvant** – a substance that enhances the effect of a drug or treatment; a substance added to a vaccine to increase the immune response to the vaccine

**advocate** – a person who works for the benefit and rights of others

**AFP** – see alfa-fetoprotein

**alanine aminotransferase (ALT)** – an enzyme found in liver cells and other cells of the body; measuring blood levels is an indicator of liver cell damage and/or death

**albumin** – a protein made by the liver; blood levels are used to check liver function

**alcohol** – the intoxicating substance in beer, wine, and hard liquors; also found in some over-the-counter products such as mouthwashes and cold remedies; also known as ethanol

**alk phos** – see alkaline phosphatase

**alkaline phosphatase** – an enzyme found in nearly every tissue of the body but found in the highest concentrations in the liver and bones; elevated levels often indicated blocked bile flow either inside or outside the liver; also known as ALP

**ALP** – see alkaline phosphatase

### **ALP isoenzymes**

**alfa-fetoprotein** – a protein produced by liver cells normally found in only trace amounts in the body; the blood test for this substance is used to screen for liver cancer (hepatocellular carcinoma)

**alfa glucosidase inhibitors** – drugs that delay the digestion of sugars (carbohydrates); used to treat type II or adult onset diabetes mellitus

**ALT** – see alanine aminotransferase

**amantadine** – a drug used to prevent cells from being infected by a virus by interfering with the virus' ability to enter the cell

**amino acid** – one of a group of substances that are the building blocks of proteins

**aminopyrine clearance test** – test used to determine how well the liver is metabolizing and detoxifying substances; a test of liver function

**aminotransferase** – see alanine aminotransferase and aspartate aminotransferase

**ammonia** – a chemical normally found in very low levels in the blood that comes from the normal breakdown of proteins in the body; elevated levels are present in severe liver failure and hepatic encephalopathy

**ANA** – see anti-nuclear antibodies

**analogue** – a molecule or substance that closely resembles another substance and may act like the original substance in some ways; sometimes called an isomer

**anasarca** – generalized swelling (edema) of the body due to an abnormal accumulation of fluid in the tissues; can be seen in severe liver failure

**anecdotal** – referring to an anecdote (see below)

**anecdote** – in medicine, an account of one person's experience usually with a particular treatment

**anemia** – a condition in which the blood is deficient in red blood cells and/or hemoglobin; a condition that reduces the blood's ability to carry oxygen to the tissues

**antibody (pl. antibodies)** – a protein produced by the immune system usually in response to infecting organisms such as bacteria or viruses; antibodies are one way the immune system tries to rid the body of infection

**antifibrosis** – in liver disease, refers to the slowing of scar tissue in the liver that forms as a result of ongoing inflammation

**antigen** – a protein that stimulates the immune system to produce antibodies; derived from the words "antibody generator"

**anti-HCV antibody** – any of a number of antibodies produced by the immune system in response to the hepatitis C virus; the presence of these antibodies in the blood indicate that the person has been exposed to the hepatitis C virus; the screening test for hepatitis C (the anti-HCV test) detects these antibodies in the blood

**anti-liver-kidney microsomal antibodies** – an autoantibody; see autoantibodies for additional details

**anti-LKM** – see anti-liver-kidney microsomal antibodies

**anti-nuclear antibodies (ANA)** – an autoantibody; see autoantibodies for additional details

**antioxidant** – a substance that inhibits the chemical process called oxidation; in hepatitis C, antioxidants are used to limit damage done by high levels of free radicals present because of ongoing inflammation caused by the virus

**antiproliferative** – having the effect of decreasing the ability of something to rapidly grow and increase in number

**antisense** – in drug development, a small molecule that binds to part of the genetic material of a target substance (such as the hepatitis C virus) to stop specific metabolic (life sustaining) functions; in hepatitis C, researchers are trying to develop antisense drugs that will prevent HCV replication (reproduction)

**anti-SMA** – see anti-smooth muscle antibodies

**anti-smooth muscle antibodies** – an autoantibody; see autoantibodies for additional details

**antiviral** – an agent that kills viruses or suppresses their replication (reproduction)

**apoptosis** – process of programmed cell death, which causes the cell to die within a specific timeframe

**APTT** – see partial thromboplastin time

**arthralgia** – pain in one or more joints

**ascites** – abnormal accumulation of fluid in the abdomen; a common complication of portal hypertension

**aspartate aminotransferase (AST)** – an enzyme found in liver cells and other cells of the body; measuring blood levels is an indicator of liver cell damage and/or death

**AST** – see aspartate aminotransferase

**asymptomatic** – without symptoms

**autoantibody (pl. autoantibodies)** – abnormal antibodies that act against the body's own tissues because it has mistaken them for foreign; more than half of all people with chronic hepatitis C have one or more autoantibodies in their blood

**autoimmune** – a condition characterized by the production of abnormal antibodies that attack the body's own tissues

**B cell** – an immune cell that when activated produces antibodies; the cells responsible for the body's humoral (antibody) immune response; also known as B lymphocyte

**B cell lymphoma** – a form of B cell cancer

**b-DNA** – see branched DNA test for HCV

**B lymphocyte** – see B cell

**bicarbonate** – a charged particle called an electrolyte; blood level may be abnormal in liver failure and a variety of other diseases

**bile** – a yellowish green fluid made by the liver from bile salts, bilirubin (broken-down red blood cells), cholesterol, and other substances; the fluid stored in the gallbladder; the fluid released from the gallbladder into the intestine to help fat digestion

**bile acids** – a group of chemicals produced by the breakdown of cholesterol; levels are often abnormal with liver and/or gallbladder disease

**bilirubin** – a yellow-orange substance generated in the liver from the breakdown of hemoglobin from old red blood cells; the substance that causes jaundice when blood levels are abnormally high; blood levels are one indicator of liver function

**conjugated bilirubin (direct bilirubin)** – bilirubin that is attached to another chemical called glucuronic acid in a process called conjugation. Conjugation takes place inside liver cells. Conjugated bilirubin is excreted in the bile. Normally, conjugated bilirubin makes up less than 10% of the total bilirubin.

**total bilirubin** – the sum of both the conjugated and unconjugated bilirubin

**unconjugated bilirubin (indirect bilirubin)** – Unconjugated bilirubin has not undergone the conjugation process in the liver. Normally, unconjugated bilirubin makes up over 90% of the total bilirubin.

**biofeedback** – a way of monitoring small changes in the body with the aid of sensitive machines; a technique used to teach people to control bodily functions such as blood pressure, temperature, blood flow, gastrointestinal functioning, and brain wave activity

**bleeding esophageal varices** – see varix

**blood serum** – the liquid part of blood; the liquid that separates from blood when it clots completely

**blood sugar** – see glucose

**blood urea nitrogen** – a chemical produced by the liver in the process of breaking down proteins; blood levels are used to monitor kidney function and to a lesser extent, liver function

**body mass index (BMI)** – a measure of a person's weight in proportion to height; an indicator of being over or underweight; calculated by dividing your weight (in kilograms) by your height in meters squared; a healthy BMI for adults is between 18.5 and 24.9

**bone marrow suppression** – inhibition of the body's ability to produce blood cells that are normally produced in the bone marrow

**branched DNA test for HCV (b-DNA)** – test used to check for the presence of the hepatitis C virus in the blood; test used to check viral load

**BUN** – see blood urea nitrogen

**caffeine** – the stimulating chemical in coffee, black teas, colas, chocolate, and other foods; processed (metabolized) by the liver; caffeine metabolism reflects the adequacy of the liver's metabolic functions

**calcium** – a charged particle called an electrolyte; needed for many important functions of the body including bone formation and muscle contractions; can be abnormally high or low in various types of liver disease

**CAM** – see complementary and alternative medicine

**caput medusae** – enlarged, visible veins that start at the navel and spread out and up over the abdomen; caused by portal hypertension

**carbohydrate** – a sugar (simple carbohydrate) or starch (complex carbohydrate); a food component found in sugars, certain vegetables, grains, and beans

**carbon tetrachloride-induced hepatotoxicity** – liver damage resulting from exposure to carbon tetrachloride (CCl<sub>4</sub>); liver damage caused by exposure to any of a number of substances containing CCl<sub>4</sub> such as dry cleaning fluid, solvents, rubber waxes, and resins

**carcinogenic** – capable of causing cancer

**cardinal signs** – signs that indicate the presence of a specific disease or condition

**cardiovascular** – relating to the heart and blood vessels

**CBC** – see complete blood count

**CD4 cell** – an immune cell that participates in the body's cellular immune response; the cell that is the main target of the human immunodeficiency virus; immune cells that help turn on the body's immune response; also known as T4 cell or T helper cell (sometimes called Th1 and Th2 cells) *Th1 and Th2 cells*

**CD4 count, absolute** – the number of T helper cells in a cubic millimeter of blood; also called a T4 count

**CD8 cell** – an immune cell that participated in the body's cellular immune response; cells that destroy virus infected cells and cause transplant rejection; also known as T8 cell, T suppressor cell, and cytotoxic T cell)

**CD81** – a protein on the surface of cells including liver cells; another term for TAPA-1 molecule (target of an antiproliferative antibody); may be a binding site for the hepatitis C virus that allows it to enter cells

**cell-mediated immunity** – one of the two branches of the immune system that defends the body through the actions of specialized immune cells such as cytotoxic T cells

**chemotherapy** – the use of chemical agents to treatment or control disease; commonly refers to drugs used to kill cancer cells

**chloride** – a charged particle called an electrolyte; one of the four major electrolytes in the body; levels may be abnormal in advanced liver failure

**cholestasis** – slowed or blocked bile flow; may be associated with elevated bilirubin levels

**cholesterol** – a lipid or fat that is both absorbed from the food we eat and manufactured by the liver; blockage of bile flow either inside or outside the liver increases the amount of cholesterol in the blood

**chronic hepatitis** – a course of hepatitis (liver inflammation) that lasts more than six months

**cirrhosis** – scarring of the liver that has progressed to the point that the structure of the liver is abnormal; the stage of liver disease that follows if there is progressive fibrosis

**cis** – a chemical prefix that refers to a specific arrangement of chemical bonds; the opposite of this chemical arrangement is known as trans

**Cl** – see chloride

**clearance** – see spontaneous clearance

**clinical** – in medicine, anything related to disease that can be observed or diagnosed in a patient

**clinical trial** – process used to evaluate the effectiveness and safety of new medications, procedures, or medical devices by monitoring their effects on large groups of people; the testing usually required by the Food and Drug Administration before approving a new drug, procedure or medical device

**phase I trial** – This is the first clinical trial for studying an experimental drug or treatment in humans. Phase I trials are usually small (10-100 people) and are used to determine safety and the best dose for a drug. These trials provide information about side effects, and how the body absorbs and handles the drug. People in these trials usually have advanced disease and have already received the best available treatment.

**phase II trial** – Phase II trials examine whether a drug or therapy is active against the disease it is intended to treat. Side effects are studied. A phase II trial is a noncomparative study, meaning the therapeutic effects and side effects of the experimental treatment are not compared to another drug or a placebo.

**phase III trial** – Phase III trials are conducted to find out how well a drug or therapy works compared to standard treatment or no treatment. Phase III trials are large studies and usually involve several hundred to thousands of patients.

**controlled clinical trial** – A controlled clinical trial divides participants into study groups to determine the effectiveness and safety of a new treatment. One group receives the experimental treatment; the other group receives placebo (an inactive substance) or the standard therapy. This group is called the control group. Comparison of the experimental group with the control group is the basis of determining the safety and effectiveness of the new treatment.

**randomized clinical trial** – A randomized clinical trial involves patients who are randomly (by chance) assigned to receive either the experimental treatment or the control treatment (placebo or standard therapy).

**CMV** – see cytomegalovirus

**collagen** – fibrous protein that is one of the main components of scar tissue (fibrotic tissue); a component of bones, cartilage, tendons, and other connective tissues

**combination therapy** – therapy that involves two or more components that can be drugs, procedures, or other specific treatments

**complementary and alternative medicine (CAM)** – medical practices that are not routinely taught at western medical schools; medical disciplines other than allopathic medicine including traditional Chinese medicine, acupuncture, Ayurvedic medicine, naturopathy, homeopathy, chiropractic medicine, massage therapy, aromatherapy, and others

**complete blood count (CBC)** – a blood test that includes measurements of white blood cells, red blood cells, hemoglobin, hematocrit, platelets, and possibly others

**conjunctiva** – the lining of the inner surfaces of the eyelid and the exposed surface of the eyeball

**conjunctival capillaries** – the tiny blood vessels of the conjunctiva

**contraindicate** –in medicine, a condition or other reason not to use a particular drug or treatment

**contraindication** – see contraindicate

**controlled clinical trial** – see clinical trial

**coproporphyrin** – a substance produced in the liver and bone marrow during the process of making a chemical called heme; blood levels reflect how well the liver is performing its job of making heme

**creatinine** – a waste product of muscle cell metabolism; used to check for hepatorenal syndrome in people with cirrhosis and liver failure

**cryoglobulin** – abnormal blood protein formed when several antibody molecules (gamma globulins) clump together; protein in the condition cryoglobulinemia that can cause abnormal blood clots in the brain (stroke), eyes, and/or heart

**cryoglobulinemia** – the presence of abnormal antibodies called cryoglobulins in blood; the condition may lead to kidney damage, kidney failure, and a variety of other symptoms; this condition is commonly found in people with chronic hepatitis C

**cure** – in hepatitis C, sustained viral clearance is considered a cure; undetectable hepatitis C virus in the blood for six or more months after the completion of treatment

**cytokine** – a small protein released by cells that has specific effects on other cells; proteins that carry the signals for many of the immune system responses

**cytomegalovirus (CMV)** – any of a group of viruses in the herpes virus family that cause infections in humans and animals; a virus that usually does not cause disease in healthy adults, but can cause disease in people with immune suppression such as those with HIV/AIDS or transplant recipients

**cytopathic** – relating to disease or deterioration of cells; direct damage to cells

**cytotoxic T cell** – a member of the T lymphocyte family of white blood cells; acts to destroy cells marked for destruction by the immune system as part of the body's cellular immune response

**decoction** – in traditional Chinese medicine, a strong tea made by combining herbs with cold water, bringing the mixture to a boil, and simmering it for 10-20 minutes

**decompensation** – in the liver, the inability of the liver to regenerate itself and compensate for damage it has sustained; liver damage that has progressed to the point that the liver functions begin to deteriorate

**dehydration** – in medicine, the condition when the body is deficient in water

**delta hepatitis** – see hepatitis, hepatitis D

**deoxyribonucleic acid (DNA)** – the type of molecule that human genes are made of; the molecule that carries all genetic information in humans

**depression** – a mental condition characterized by apathy, lack of emotional expression, social withdrawal, changes in eating and sleep patterns, and fatigue; a mental condition that can accompany any life-changing event including being diagnosed with a chronic illness; a possible side effect of interferon/ribavirin therapy

**dextrose** – see glucose

**direct bilirubin** – see bilirubin, conjugated bilirubin

**distend** – to swell out or expand from internal pressure; in hepatitis C, ascites causes distension of the abdomen

**DNA** – see deoxyribonucleic acid

**durable response** – see sustained response

**dyspnea** – difficult or labored breathing

**edema** – swelling due to an excess fluid (water) in the body; most often seen in the lower legs and feet, but also seen in the hands

**EIA** – see enzyme immunoassay

**electrolyte** – in medicine, a dissolved chemical that carries either a positive or negative charge; commonly refers to sodium, potassium, chloride, bicarbonate, calcium, and phosphate

**emaciation** – extreme thinness; generally the result of starvation or severe illness

**encephalopathy** – see hepatic encephalopathy

**endogenous interferon** – a naturally-occurring protein produced by the immune system in response to attack by a virus that helps protect other healthy cells from attack

- endorphin** – a substance produced in the brain, spinal cord, and other parts of the body that causes elevated mood, reduced pain, and reduced stress; the body's natural pain killer; a substance released by the body during exercise
- enzyme** – a protein that starts and/or propels a specific chemical reaction; commonly tested liver enzymes include ALT, AST, and GGT
- enzyme immunoassay (EIA)** – one of the tests used to detect antibodies to HCV (anti-HCV antibody)
- epitope** – specific amino acid sequence of a foreign antigen, such as the hepatitis C virus, that an antibody recognizes, binds to, and reacts against
- erythema nodosum** – a type of skin inflammation that results in reddish, tender lumps most commonly located in the front of the legs below the knees
- esophageal varices** – see varix
- ethanol** – see alcohol
- exogenous** – derived or produced outside the body
- extracellular** – outside of a cell
- extrahepatic** – situated or originating outside the liver
- fatigue** – the state of extreme tiredness that is usually not relieved by rest or sleep
- fatty liver** – a condition in which the liver cells contain an abnormal amount of fat
- Fe** – see iron
- ferritin** – a protein that binds iron; tested to check the amount of iron in the body
- fibrinogen** – a protein that when activated by the clotting (coagulation) system turns into fibrin, an essential component of a blood clot; measured in liver disease to check the liver's protein-making ability; a test of liver function
- fibroblastic** – referring to cells or cell activities that lead to the formation of fibrous tissue or scarring
- fibrocatalytic**
- fibrosis** – in liver disease, the laying down of scar tissue in the liver; usually the result of ongoing inflammation
- FIBROSpect™** – a proprietary set of blood tests used together to differentiate no/mild liver fibrosis from severe fibrosis; this is not a substitute for liver biopsy but can possibly provide some useful information for people who cannot or do not wish to have a liver biopsy
- fibrous** – composed of or containing fibers; scar-like
- flatulence** – excess gas in the lower intestinal tract
- flavonoid** – a vitamin A-like substance found in many fruits and vegetables; many flavonoids are powerful antioxidants
- free radical** – a highly reactive chemical that oxidizes other chemicals in the body; the chemicals that cause oxidative stress in the body; the chemicals that cause oxidative damage in the body; chemicals normally produced in the body and neutralized by antioxidants; chemical produced in excessive amounts by chronic infection and/or inflammation
- fulminant liver failure** – severe and rapidly progressive liver cell death
- galactosamine** – a compound made in the body consisting of sugar and protein molecules that is used in the production of certain types of tissue; can be toxic to the liver; used in animal experiments to cause liver damage
- gamma globulin** – see immune globulin

**gamma-glutamyl transferase (GGT)** – a liver enzyme (protein); blood GGT levels are measured to check for liver damage associated with slow or blocked bile flow; GGT is elevated in all forms of liver disease

**gastroenterologist** – a doctor who specializes in diagnosing and treating diseases of the digestive system including the liver

**gastroesophageal varices** – see varix

**gastrointestinal** – having to do with the digestive tract, which includes the mouth, esophagus, stomach, and intestines

**gene** – the material that encodes for all inherited traits and characteristics of a living thing; a piece of DNA (deoxyribonucleic acid) that carries the message for a particular trait or characteristic

**genetic** – having to do with the digestive tract, which includes the mouth, esophagus, stomach, and intestines

**genome** – all the genetic information of a particular organism

**genotype** – in hepatitis C, one of several different species of the hepatitis C virus; different genotypes have different responses to interferon-based therapy; different genotypes have some differences in the genes they contain

**genotype test** – a test to identify the specific genotype of the HCV virus

**GGT** – see gamma-glutamyl transferase

**GGTP** – see gamma-glutamyl transferase

**glomerulonephritis** – a kidney disease in which the filtering units of the kidney (the glomeruli) are damaged; the disorder is characterized by edema (swelling), elevated blood pressure, and excess protein in the urine

**glossitis** – inflammation of the tongue; usually accompanied by redness and uncomfortable soreness

**glucose** – the form of sugar found in the blood; the breakdown product of simple and complex carbohydrates that can be used by the body; also known as dextrose or blood sugar

**glutamate oxaloacetate transaminase (GOT or SGOT)** – see aspartate aminotransferase

**glutamate pyruvate transaminase (GPT or SGPT)** – see alanine aminotransferase

**glutathione** – a protein formed in the liver that plays an important role in the immune system; the body's most abundant natural antioxidant (protects against free radical damage)

**glycemic index** – a scale for evaluating foods, based on the rate at which sugar is absorbed into the bloodstream after eating a specific food

**glycemic load** – a ranking system for carbohydrate content in food portions based on their glycemic index and the portion size

**glycogen** – a large molecule made up of smaller glucose molecules; the storage form of glucose primarily formed in the liver

**glycoprotein** – a compound made of protein and carbohydrate (sugar); also known as glucoprotein

**GOT** – see aspartate aminotransferase

**GPT** – see alanine aminotransferase

**grade** – in liver biopsy, a term used to describe the amount of inflammation in the liver; the higher the grade, the greater the inflammation

**HAV** – see hepatitis, hepatitis A

**HBcAg** – hepatitis B core antigen; a blood marker of active hepatitis B infection

**HbeAg** – hepatitis B e antigen; a blood marker of active hepatitis B infection

**HbsAg** – hepatitis B surface antigen; a blood marker of active hepatitis B infection

**HBV** – see hepatitis, hepatitis B

**HCC** – see hepatocellular carcinoma

**HCT** – see hematocrit

**HCV** – see hepatitis, hepatitis C

**HCV antibody** – see anti-HCV antibody

**HCV-EIA** – see anti-HCV antibody

**HCV PCR** – see HCV polymerase chain reaction

**HCV polymerase chain reaction (PCR)** – test to check for the presence of the hepatitis C virus in the blood; a qualitative HCV PCR test determines the presence or absence of virus in the blood; a quantitative HCV PCR test measures the amount of detectable HCV in the blood

**HCV RNA** – hepatitis C virus ribonucleic acid; the genetic material of HCV

**HCV TMA** – see transcription mediated amplification

**helicase** – an enzyme used in viral replication; it enables the genetic material to uncoil so it can be replicated

**hematemesis** – vomiting of blood

**hematocrit** – the percentage of the blood made up by red blood cells

**heme** – the iron-containing portion of hemoglobin, the substance in red blood cells that enables them to carry oxygen

**hemochromatosis** – a hereditary disease caused by increased absorption and excessive storage of iron in the tissues, especially the liver; the untreated disorder can lead to cirrhosis of the liver, heart disease, diabetes mellitus, testicular atrophy, and arthritis

**hemoglobin** – the protein in red blood cells that carries oxygen

**hemoglobinopathy** – a group of hereditary disorders characterized by abnormal hemoglobin structure; sickle cell anemia is an example

**hemolytic anemia** – anemia due to increased destruction of red blood cells; can be a side effect of ribavirin therapy

**hemorrhoids** – enlarged, fragile veins found around the anus (the opening through which bowel movements pass); can lead to bleeding, discomfort, and itching; may be associated with portal hypertension

**hepatic** – relating to the liver

**hepatic cell** – see hepatocyte

**hepatic encephalopathy** – a complication of liver failure that results from large amounts of ammonia that accumulate in the brain; symptoms include euphoria, depression, confusion, slurred speech, abnormal sleeping patterns, incoherent speech, tremors, rigid muscles, and eventually coma

**hepatitis** – inflammation of the liver

**hepatitis A** – a disease caused by the hepatitis A virus (HAV); transmitted by food or drink that has been contaminated by an infected person; symptoms include nausea, fever, and jaundice (yellowing of the skin and/or eyes); hepatitis A does not progress to chronic hepatitis

**hepatitis B** – a disease caused by the hepatitis B virus (HBV); transmitted sexually or by contact with infected blood; hepatitis B may progress to chronic hepatitis and can be fatal

**hepatitis C** – a disease caused by the hepatitis C virus (HCV) C; transmitted by contact with infected blood via contaminated needles and transfusion of infected blood products; rarely transmitted sexually; hepatitis C becomes chronic in 85% of people infected and can be fatal in a small percentage of cases

**hepatitis D, delta hepatitis** – a disease caused by the hepatitis D virus; transmitted via infected blood, contaminated needles, or sexual contact with an infected person; the virus only causes disease in patients who already have HBV

**hepatitis E** – a disease caused by the hepatitis E virus; transmitted via food or drink handled by an infected person, or through infected water supplies in areas where fecal matter may get into the water; more common in tropical and subtropical regions of the world than in the United States and Canada

**hepatitis C screening test** – see anti-HCV antibody

**hepatocellular carcinoma (HCC)** – the most common malignant tumor of the liver; chronic hepatitis B and C are risk factors for this cancer especially in those with cirrhosis; also known as liver cancer, hepatoma, and HCC

**hepatocyte** – liver cell; also known as hepatic cell

**hepatologist** – a doctor whose practice is limited to diseases and disorders of the liver

**hepatoma** – see hepatocellular carcinoma

**hepatomegaly** – liver enlargement

**hepatoprotective** – protective of the liver

**hepatotoxic** – toxic to the liver

**herbicide** – a substance used to kill plants

**histologic** – pertaining to study of the microscopic structure, composition, and function of tissues; sometimes written as histological

**histological** – see histologic

**histology** – the study of the form of cells and tissues that can only be seen with the microscope; also called microscopic anatomy

**HIV** – see human immunodeficiency virus

**hives** – see urticaria

**hormone** – a substance produced in the body that controls and regulates the activity of other cells or organs; most hormones are secreted by specialized glands such as the thyroid gland; they control digestion, metabolism, growth, reproduction, mood and other essential body functions

**human immunodeficiency virus (HIV)** – the virus that causes AIDS (acquired immunodeficiency syndrome); HIV infection weakens the body's immune defenses by destroying CD4 lymphocytes (T cells)

**humoral immunity** – one of the two branches of the immune system that protects the body from infections through the use of antibodies

**hyperglycemia** – high amounts of glucose (sugar) in the blood

**hypertension** – high blood pressure

**hyperthyroidism** – a condition caused by excess production of thyroid hormone resulting from an overactive thyroid gland

**hypoactivity** – abnormally reduced activity

**hypocondrium** – area of the upper abdomen below the ribs

**hypothyroidism** – deficiency of the thyroid hormone from the thyroid gland

**ibuprofen** – a non-steroidal anti-inflammatory drug (NSAID) commonly used to treat pain, swelling, and fever. Common brand names for ibuprofen include Advil®, Motrin®, and Nuprin®

**IFN** – see interferon

**Ig** – see immunoglobulin

**IL-10 (interleukin 10)** – an anti-inflammatory and immunosuppressive cytokine; normally produced in the body at sites of injury and inflammation; controls the degree of inflammation

**immune globulin** – a concentrated preparation of gamma globulins (antibodies) taken from a large group of human donors that is given by injection for the treatment of specific diseases; used to treat hepatitis A in people already infected with HBV and/or HCV; also known as gamma g

**immune system** – a complex group of cells and organs that collectively protect the body from bacterial, parasitic, fungal, and viral infections and from the growth of tumor cells; includes T-helper cells (CD4 cells), T-suppressor cells, natural killer cells, B cells, granulocytes (polymorphonuclear leukocytes), macrophages, dendritic cells, the bone marrow, the thymus gland, the spleen, and the lymph nodes

**immunity** – the condition of being protected from an infectious disease either by the action of the immune system or immunization (vaccines)

**immunodeficiency** – a defect in the functioning of the immune system which renders the body more susceptible to illness

**immunogen** – see antigen

**immunoglobulin** – proteins that act as antibodies in the body; produced by plasma cells and B lymphocytes; part of the humoral immune response; antibodies that attach to foreign substances such as bacteria and viruses and assist in destroying them; also known as Ig

**immunologist** – a person who studies or practices medicine in the area of immunology

**immunomodulator** – a chemical agent that modifies the immune response or the functioning of the immune system

**immunopathic** – substances or processes that are harmful to the immune system

**immunopathologic** – see immunopathic

**immunosuppressive** – substances or processes that decrease the immune response

**immunotherapy** – treatment to stimulate or restore the ability of the immune system to fight infection and disease; a treatment that acts by stimulating or working with the immune system

**indirect bilirubin** – see bilirubin, unconjugated bilirubin

**inference** – the act of drawing logical conclusions from known facts or facts assumed to be true

**inflammation** – a localized tissue reaction to irritation, injury, or infection; usually characterized by swelling, redness, pain, and sometimes loss of function; abnormally intense inflammation can cause tissue damage as in chronic hepatitis C

**insulin** – the hormone that controls the level of glucose in the blood; allows glucose to move from the blood into cells; produced in the pancreas by specialized cells called beta cells

**integrative medicine** – an approach to medicine that combines aspects of many medical disciplines; usually includes western medicine and any number of complementary and/or alternative medicine (CAM) approaches

**interferon** – any of a group of glycoprotein cytokines that occur naturally in the body; they can have antiviral, and antibacterial actions; synthetic interferons are used to treat a number of diseases; interferons on the basis for current western therapy for chronic hepatitis C

**interferon-based therapy** – any therapy that uses interferon as the main component; interferon-based therapy is currently the standard treatment of chronic hepatitis C in western (allopathic) medicine

**interleukin 10** – see IL-10

**interstitial** – in biology, pertaining to the small, narrow spaces between tissues or parts of an organ

**intracellular** – inside the cell; HCV and HIV are intracellular viruses

**in vitro** – literally means in glass; something that is observed in a laboratory setting (as opposed to observations made in animals or people)

**in vivo** – something that is observed in a living organism, either animals or people

**iron** – a metal found in red blood cells; helps red blood cells carry oxygen to all the cells of the body

**jaundice** – yellowish discoloration of the skin and whites of the eyes caused by abnormally high amounts of bilirubin in the body

**lactate dehydrogenase** – an enzyme found in many cells of the body but highly concentrated in liver, heart, and muscle cells; elevated blood levels may indicate liver cell damage

**lassitude** – weariness, listlessness, or reduced energy

**LDH** – see lactate dehydrogenase

**lethargy** – a state of sluggishness, inactivity, and apathy

**LFT** – see liver function test(s)

**lichen planus** – a recurrent skin rash characterized by small, flat-topped, many-sided (polygonal) bumps that can grow together into rough, scaly patches on the skin; may occur in the lining (mucous membrane) of the mouth or vagina

**LIPA assay** – see genotype test

**lipid** – fat; there are many different types of fats in the diet and in the body such as cholesterol and triglyceride; some fats are healthful and necessary for good health; some fats are harmful and play a role in various diseases including hepatitis C; includes fatty acids, neutral fats, and waxes

**lipodystrophy** – any of a group of conditions due to defective metabolism of fat that results in loss or redistribution of fat; believed to be a side effect of some HIV medications although the virus itself may also contribute to this condition; fat is usually redistributed from the face, arms, and legs into the abdomen and back

**lipoprotein** – a lipid-protein complex; the form in which fats are transported in the blood; responsible for transporting cholesterol and triglycerides and other fats from the liver to other parts of the body

**liver biopsy** – the removal and subsequent microscopic examination of small samples of liver tissue; the only reliable method to determine the amount of damage done to the liver by the hepatitis C virus; performed by inserting a long needle through the skin into the liver

**liver cancer** – see hepatocellular carcinoma

**liver enzyme** – any of the many enzymes present in liver cells including ALT, AST, GGT, LDH, alkaline phosphatase, and others; liver enzymes are monitored in chronic hepatitis C to determine the amount of ongoing damage occurring in the liver

**liver failure** – a state in which the liver is unable to adequately perform its many functions; usually the result of end-stage cirrhosis; characterized by clotting abnormalities, protein abnormalities, abnormal electrolytes, and many other signs and symptoms

**liver function test(s) (LFT)** – any of a number of tests used to check for liver function; includes bilirubin, albumin, prothrombin time, total protein, and many others.

**living donor liver transplantation** – a new procedure involving the transplantation of a portion of a liver from a living donor to replace a failed liver; both livers can grow to normal size

**loins** – the region of the hips, groin, and lower abdomen

**lymph** – see lymphatic fluid

**lymph node** – small clusters of immune cells, especially lymphocytes, located throughout the body along the channels of the lymphatic system; found in the underarms, groin, neck, chest, abdomen, and other areas throughout the body; also called lymph glands

**lymph system** – see lymphatic system

**lymphatic fluid** – the colorless slightly opaque fluid that travels through vessels called lymphatics that connect the lymph nodes in the body; carries immune cells that help fight infection and disease

**lymphatic system (lymph system)** – the network of lymph nodes and lymph vessels (lymphatics) in the body; lymph nodes are small, tightly packed collections of lymphocytes that filter, attack, and destroy organisms that cause infection; organs and tissues involved in the lymphatic system include bone marrow, thymus gland, liver, spleen, and collections of lymphatic tissue in the throat and small intestine

**lymphocyte** – a specific type of white blood cell; a type of immune cell that specializes to perform different immune system activities; types of lymphocytes include T cells, B cells, NK cells (natural killer cells), and others

**macrophage** – a type of white blood cell that specializes in ingesting (eating) foreign matter and debris; these cells often ingest invading bacteria

**malabsorption** – impaired or inadequate absorption of nutrients from the digestive tract; also known as maldigestion

**maldigestion** – see malabsorption

**melena** – the passage of dark, tarry stools containing decomposing blood; an indication of bleeding in the upper part of the digestive tract (the esophagus, stomach, and first part of the small intestine)

**manipulation** – the application of manual force for healing; describes the techniques used in osteopathy, chiropractic medicine, massage, and other bodywork therapies

**meditation** – any of many practices in which the mind is inwardly focused and quieted; the practice is a spiritual practice for many but is also used for stress reduction; meditation is known to lower levels of cortisol (a hormone released in response to stress), and is believed to enhance the immune system

**melanosis** – gradual darkening of those areas of skin that are exposed to the sun

**membranoproliferative glomerulonephritis (MPGN)** – an inflammatory condition of the kidneys in which immune deposits in the tiny blood vessels of the kidneys cause damage and impair their filtering capability

**memory B cell** – a member of the B lymphocyte family of white blood cells; these cells hold the memory of exposures to microbes that have entered the body in the past; they can be reactivated to quickly begin producing antibodies if the body is invaded by the same microbe at a later date

**memory T cell** – a member of the T lymphocyte family of white blood cells; these cells hold the memory of exposure to microbes that have entered the body in the past; they can be reactivated to unleash a cell-mediated immune response if the body is invaded by the same microbe at a later date

**meridians** – in traditional Chinese medicine, the specific pathways through which vital energy (qi) and blood flow; acupuncture points are located along these meridians

**meta-analysis** – statistical analysis that allows the results of several different studies of the same subject to be combined and analyzed

**metabolism** – the collective biochemical processes that occur in a living organism; involves the balanced process of anabolism (building up or creating substances) and catabolism (breaking down or using substances); commonly used to refer the breakdown of food and its transformation into energy

**microcirculation** – the flow of blood in smallest blood vessels in the body; the part of the circulation where oxygen and nutrients pass into the tissues, and waste products are passed out of the tissue

**microbe** – a microscopic organism; includes bacteria, viruses, algae, fungi, protozoa, and some parasites; also known as a microorganism

**microorganism** – a microscopic organism; includes bacteria, viruses, algae, fungi, protozoa, and some parasites

**modality** – a form of therapy; usually refers to physical forms of therapy such as acupuncture, massage, chiropractic adjustments, etc.

**monocyte** – see peripheral blood mononuclear cell

**monogamous** – having only one sexual partner

**monotherapy** – the use of a single drug to treat a particular disorder or disease

**moxibustion** – a technique that involves the stimulation of acupuncture points by burning a small cone of dried moxa (mugwort) leaves on the end of the needle, directly on protected skin, or above the body

**mutation** – a permanent change in a gene or chromosome of an organism creating a new characteristic or trait not previously found; mutations can lead to new resistance to treatment; mutated versions of HCV are known as quasispecies

**myalgia** – pain or ache in muscle(s)

**mycophenolate mofetil** – drug marketed with trade name Cellcept®; given to organ transplant recipients to prevent rejection of the new tissue; an immune system inhibitor

**NAFL** – abbreviation for nonalcoholic fatty liver

**NAFLD** – abbreviation for nonalcoholic fatty liver disease

**NASH** – abbreviation for nonalcoholic steatohepatitis

**natural killer cell** – a member of the lymphocyte family of white blood cells; part of the cell-mediated immune system; an important immune cell that kills invading microbes and attacks tissues it sees as foreign; also called an NK cell

**necrosis** – death of cells or tissues

**neurochemical** – chemical that naturally occurs in the nervous system and plays a part in its functioning

**neurological** – of, or pertaining to the nervous system and the diseases that affect it

**neuropathy** – a condition that involves damage to the peripheral nerves (those nerves outside of the brain and spinal cord); many neuropathies affect those nerves most distant from the spinal cord, that is those of the hands and feet; sensation is altered with neuropathy and patients may experience any of several symptoms including numbness, tingling, and pain

**neutrophil** – a type of granular white blood cell that attacks microorganisms such as bacteria

**NK cell** – see natural killer cell

**non-Hodgkin's lymphoma** – a form of cancer of the lymphatic system

**nonresponder** – a person who does not respond to therapy at all or a person who initially responds to therapy, then experiences a relapse or has abnormal liver enzyme tests during therapy

**nonspecific** – not due to any single known cause, such as a specific pathogen

**nonsteroidal analgesic** – of, or pertaining to, a substance that is not a steroid but has similar effects, such as the anti-inflammatory, ibuprofen

**nontoxic** – does not contain substances that are harmful, poisonous, or destructive

**5'NT** – see 5'-nucleotidase

**nucleocapsid** – the coat (capsid) of a virus plus the enclosed nucleic acid genome

**nucleoside** – a subunit of DNA or RNA; To form a DNA or RNA molecule, thousands of nucleotides are joined in a long chain

**nucleoside reverse transcriptase inhibitor (NRTI)** – a group of drugs used primarily in the treatment of HIV/AIDs; these drugs are incorporated into the viral DNA and block viral replication; examples include AZT (Retrovir®), 3TC®, ddC (Hivid®), ddI (Didanosine®), and d4T (Zerit®)

**5'-nucleotidase (5'NT)** – an enzyme found in many tissues throughout the body including the liver; increased 2-6 times above the normal amount when bile flow is blocked either inside or outside the liver

**nucleotide** – see nucleoside

**nutritional supplement** – any product such as a vitamin, mineral or other substance that is taken to augment the amount of nutrients in the diet; used to improve overall health and/or to help correct specific health problems

**OSHA** – Occupational Safety and Health Administration, U.S. Department of Labor

**osteoporosis** – thinning of the bones with reduction in bone mass due to depletion of calcium and bone protein; a condition that predisposes to bone fractures that are often slow to heal and/or heal poorly; more common in older adults, particularly postmenopausal women and people taking steroidal drugs

**oxidative stress** – a condition that occurs when an overabundance of free radicals are present in the body; chronic infection and inflammation cause increased oxidative stress; high levels of free radicals can lead to tissue damage

**oxygenation** – the chemical process of adding oxygen to something

**palpation** – the act of feeling with the hand; the application of light pressure to the surfaces of the body to determine the consistency of the body parts as part of a physical diagnosis

**palpitations** – involuntary awareness of one's heart beat; can be experienced as feeling the heart is beating harder or faster than usual, or that it is beating irregularly

**partial thromboplastin time (PTT)** – a test to see how quickly blood is able to form a clot

**pathogen** – an agent that causes disease, particularly a living microorganism such as a virus or bacterium

**pathogenesis (pl. pathogeneses)** – the development of a disease or illness

**pathological** – relating to or caused by disease

**PBMC** – see peripheral blood mononuclear cell

**PCR** – see HCV polymerase chain reaction

**PCT** – see porphyria cutanea tarda

**pedal edema** – swelling of the feet caused by an excess accumulation of fluid in the body

**peginterferon** – see pegylated interferon

**pegylated interferon** – a form of interferon in which polyethylene glycol molecules have been bound to the interferon molecule; pegylated interferon has a slower rate of breakdown and clearance from the body than standard interferon

**peptide** – a compound containing two or more amino acids; groups of peptides form proteins

**peripheral blood mononuclear cell (PBMC)** – a large white blood cell found in the blood; one of the cell types of the immune system; also known as monocyte

**pesticide** – a chemical preparation used to kill insects or other plant/animals pests

**petechia** – tiny, flat, round, purplish-red spots on the skin caused by bleeding between the layers of the skin or in the mucosal membranes

**pharmacology** – the study of drugs; includes study of drug sources and their properties; also the study of the body's metabolism of and reaction to drugs

**phosphatidylcholine** – a compound consisting of glycerol, fatty acids, and phosphorus; as a nutritional supplement, this compound has been shown to have a hepatoprotective effect

**phospholipid** – the major form of lipids in the body; a principal structural material of living cells; the main component of cell membranes (the outer layer of cells)

**physiologic** – see physiological

**physiological** – normal; not pathologic; characteristic of the normal functioning or state of the body, or a tissue or organ

**phytopharmacology** – the study of compounds that are found in plants that have medicinal uses; the related terms phytochemical and phytonutrient are used interchangeably to describe those plant compounds that are thought to have medicinal properties

**pituitary (gland)** – the main endocrine gland that controls endocrine functions in the body; called the master gland because it produces hormones that control other glands and many body functions

**placebo** – an inactive substance, or dummy medication, or sugar pill; widely used in clinical trials to test if an observed effect is truly due to the experimental drug; for a drug to be considered effective, it must show significantly better results than that produced by the placebo

**plasma cell** – a member of the B lymphocyte family of white blood cells; this cell is responsible for antibody production; also known as an activated B cell

**platelet** – an irregular, disc-shaped element of the blood that assists in blood clotting; during normal blood clotting, platelets group together (aggregate); platelets are fragments of larger cells called megakaryocytes; liver disease can cause a shortage of platelets

**polyarteritis nodosa** – a disorder of small and medium sized arteries characterized by inflammation and possible death of the blood vessel cells; usually affects adult males; can be associated with hepatitis C infection; the kidneys are most commonly involved, but muscles, the intestine, and the heart can also be affected

**polymer** – a compound created by joining smaller molecules called monomers

**polymerase** – any enzyme that catalyzes polymerization, the successive joining together of smaller monomers to make a polymer

**polymyalgia** – pain or aching in many muscles; sometimes short for polymyalgia rheumatica (PMR), a disorder of the muscles and joints of older persons characterized by pain and stiffness

**porphyria cutanea tarda (PCT)** – an inherited disorder of porphyrins metabolism; the liver uses porphyrins to make hemoglobin, the iron-containing portion of the red blood cells; PCT can be acquired with certain types of chemical poisoning

**porphyrin** – pigmented (colored) compounds that are found in heme (the iron containing molecule in hemoglobin), bile, and cytochromes; blood levels of the various porphyrins can be affected by liver failure

**portal hypertension** – increased blood pressure in the portal vein that brings blood into the liver; usually occurs because scarring in the liver resists the free flow of blood into the liver; the increased pressure in the portal vein also causes increased pressure in the veins of the abdomen, intestines, stomach, and esophagus; portal hypertension causes many of the complications associated with liver cirrhosis

**portal vein** – the large vein that carries blood from the intestines to the liver for processing before returning it to circulation via the hepatic veins

**potassium** – a charged particle called an electrolyte; one of the four major electrolytes in the body; blood levels may be abnormal in cirrhosis and a variety of other diseases

**prealbumin** – see transthyretin

**prodromal symptom** – symptom that starts just before the onset of an illness

**prognosis** – the probable outcome or course of a disease; a person’s chance of recovery from a disease or injury

**protease** – see proteinase

**protease inhibitor** – any of a class of anti-HIV drugs designed to inhibit the HIV protease enzyme; protease inhibitors prevent the replication of viruses

**protein** – a large molecule composed of one or more chains of amino acids (peptides); proteins are required for the structure, function, and regulation of the body’s cells, tissues, and organs; the liver is responsible for making many of the body’s proteins

**proteinase** – any enzyme that breaks down proteins by splitting them into chains of peptides; also called protease

**prothrombin time (PT)** – the time it takes for blood to form a clot; monitored in liver disease to assess liver function; many of the proteins needed for clotting are produced in the liver

**protocol** – a detailed plan for medical treatment or an experiment

**pruritus** – intense itching of the skin

**psoriasis** – a reddish, scaly rash often located on the elbows, knees, scalp, and around or in the ears, navel, genitals or buttocks; caused by the body making too many skin cells; some cases are believed to be autoimmune conditions

**psychosocial** – having aspects of social and psychological behavior

**PT** – see prothrombin time

**PTT** – see partial thromboplastin time

**purpura** – dark red to purple lesions on the skin that typically lose their color when pressed upon; this skin rash can be seen with a wide variety of disorders including cryoglobulinemia

**qi** – in traditional Chinese medicine, the energy that flows through everything and is the organizing force of the universe; the most important substance circulating through the body

**qi gong** – qi means energy, and gong means skill; a self-healing art that combines movement and meditation; visualizations are employed to enhance the mind/body connection and assist healing

**quasispecies** – species of viruses that are very similar but have differences; quasispecies are the result of a virus mutation; mutation can cause several quasispecies to exist in the same person

**RA factor** – a specific antibody present in the blood of 60-80% of people with rheumatoid arthritis

**randomized clinical trial** – see clinical trial

**Raynaud’s phenomenon** – intermittent episodes when the arteries of the fingers or toes suddenly go into spasm causing the skin to become very pale, cold, and numb; attacks are usually brought on by exposure to the cold or emotional stress and are commonly relieved by warming the affected body part

**RBC** – see red blood cell

**Rebetron®** – a combination of interferon alfa-2b and ribavirin used to treat hepatitis C infection; ribavirin is taken by mouth and interferon alfa-2b is administered subcutaneously (beneath the skin)

**recombinant immunoblot assay (RIBA)** – a sensitive testing method used to detect the presence of anti-HCV antibodies in the blood; most often used to confirm a positive result on an EIA (enzyme immunoassay) screening test for anti-HCV antibodies

**red blood cell** – cells that carry oxygen from the air we breathe to all the organs and tissues of the body; supply may be decreased in people with liver disease

**relapse** – the return of signs and symptoms of a disease following a period of remission (absence of the disease; in hepatitis C, a relapse is the reappearance of the virus after an period of it being undetectable; less frequently used to mean a spike in the liver enzymes after a period of being normal

**relapser** – someone who has experienced a relapse (see relapse)

**remission** – the resolution of the signs and symptoms of a disease; can be temporary or permanent

**renal** – relating to the kidneys

**replication** – process of duplicating or reproducing; viral reproduction is called replication

**replication rate** – the rate at which a virus or other microbe is able to reproduce itself

**reservoir** – in chronic viral illnesses (such as HIV) a place in the body where the virus exists but is not detectable by usual medical means; some researchers believe there is a possibility there is one or more reservoirs of HCV in the body, at least in some people with the infection

**retinol** – see vitamin A

**retrovirus** – an RNA virus; a virus with an RNA genome instead of a DNA genome

**rheumatoid arthritis** – an autoimmune disease that causes chronic inflammation of the joints, the tissue around the joints, and other organs in the body

**rheumatoid factor** – an autoantibody; see autoantibodies for additional details

**RIBA** – see recombinant immunoblot assay

**ribavirin** – a nucleoside analogue drug; it has no activity against HCV when used alone, but is effective in some people when used in combination with interferon; ribavirin is believed to act against HCV not as antiviral but as an immune enhancer

**ribonucleic acid (RNA)** – one of two types of molecules that encode genetic information (the other is DNA)

**ribozyme** – an RNA molecule that also acts as an enzyme; ribozymes bind to RNA and cut (cleave) it

**RNA** – see ribonucleic acid

**secondary condition** – condition that develops as a consequence of another condition that preceded it

**serum** – see blood serum

**SGOT** – see aspartate aminotransferase

**SGPT** – see alanine aminotransferase

**short interfering RNA (siRNA)** – small pieces of double-stranded RNA produced when larger pieces of are cut (cleaved); siRNA molecules bind with proteins to form a unit called the RNA-induced silencing complex (RISC) that suppresses the expression of the gene it corresponds to in the viral genome silencing the gene from which the siRNA is derived

**shortness of breath** – see dyspnea

**Sicca syndrome** – see Sjögren’s syndrome

**sign** – in medicine, any objective (observable) evidence of a disease

**Sjögren’s syndrome** – an autoimmune disease characterized by dry eyes and mouth, purple spots on the face or inside the mouth, and swollen salivary glands; a condition sometimes seen in people with chronic hepatitis C; also known as Sicca syndrome

**sodium** – a charged particle called an electrolyte; one of the four major electrolytes in the body; blood levels may be abnormal in cirrhosis and a variety of other diseases

**sonography** – see ultrasonography

**spontaneous clearance** – in hepatitis C, the ability to rid the body of virus without treatment; this occurs in 15-20% of people infected with HCV

**stage** – in hepatitis C, the degree of fibrosis present on liver biopsy; the higher the stage, the more fibrosis present

**steatohepatitis** – the presence of fat in the liver cells with inflammation

**steatorrhea** – passing fat in bowel movements; fatty stools are usually accompanied by a particularly bad odor and excessive intestinal gas; stool containing high amounts of fat often floats in the toilet bowl

**steatosis** – accumulation of fat in the liver that can cause inflammation and lead to fibrosis and/or cirrhosis

**stellate cells** – in the liver, the main cell type responsible for making fibrous connective tissue

**sustained responder** – in hepatitis C, a person who has no detectable virus in his or her blood and whose liver enzyme tests continue to be normal six months after completing therapy

**sustained response** – see sustained responder

**symptom** – any subjective change (something experienced by the patient) that may indicate a disease process such as fatigue, pain, thirst, etc.

**T3** – see triiodothyronine

**T4** – see thyroxine

**T4 cell** – see CD4 cell

**T4 count** – see CD4 count

**T8 cell** – see CD8 cell

**tai chi** – a system of gentle, flowing exercises designed to keep the body's qi (energy) moving

**T cell** – a type of white blood cell that is a crucial part of the immune system; they activate the rest of the immune system and directly attack invading organisms; also known as T lymphocyte

**T helper cell** – see CD4 cell

**T suppressor cell** – a member of the T lymphocyte family of white blood cells that are part of the body's immune system; these cells act to blunt the immune response

**thymus gland** – the organ in which T lymphocytes (such as CD4 and CD8 T cells) mature; part of the immune system

**thyroid gland** – the organ that produces thyroid hormones that control the metabolic rate of every cell in the body

**thyroid stimulating hormone (TSH)** – protein produced by the pituitary gland that acts on the thyroid gland to cause it to produce the two thyroid hormones

**thyroiditis** – inflammation of the thyroid gland; can cause the release of excess of thyroid hormones into the blood stream

**thyroxin** – one of two hormones produced by the thyroid gland

**TIA** – see transient ischemic attack

**TIBC** – see total iron binding capacity

**tinnitus** – ringing in the ears; can be caused by certain medications (such as aspirin and other anti-inflammatory drugs), aging, trauma, and other disorders

**total bilirubin** – see bilirubin

**total iron binding capacity (TIBC)** – a measurement of how much iron the blood is able to capture

**total protein (TP)** – a measurement of all proteins in the blood; used to determine how well the liver is performing its job of making proteins

**toxic** – poisonous; capable of causing injury or harm, especially by chemical means

**toxicity** – the quality of being toxic

**toxin** – a poisonous substance, particularly a protein produced by living cells or organisms; certain toxins are capable of inducing the immune system to produce neutralizing antibodies called antitoxins

**TP** – see total protein

**trans** – a chemical prefix that refers to a specific arrangement of chemical bonds; the opposite of the trans chemical arrangement is known as cis

**transcription mediated amplification (TMA)** – a testing technique used to measure the amount of HCV in the blood

**transient ischemic attack (TIA)** – also called a mini-stroke; a neurological event that has the signs and symptoms of a stroke but that resolve in a short period of time; due to a temporary lack of adequate oxygen (ischemia) in the brain

**transthyretin** – a small protein made by the liver in the process of making the larger protein albumin; a sensitive indicator of how well the liver is able to produce proteins

**triglyceride** – a form of fat that exists in many foods and in the body; triglycerides in blood come from fats in foods and can also be made in the body

**triiodothyronine (T3)** – one of two hormones produced by the thyroid gland

**TSH** – see thyroid stimulating hormone

**tui na** – Chinese massage therapy

**tumor** – an abnormal mass of tissue that can be either benign (noncancerous) or malignant (cancerous)

**ultrasonography** – diagnostic imaging technique that uses sound waves to construct a picture (sonograph) of an internal organ or body structure; also known as sonography

**ultrasound** – high-frequency sound waves; an ultrasound test (sonography) bounces sound waves off internal organs of the body to construct images of the target organ; liver ultrasound is used to screen for liver cancer

**urticaria** – raised, itchy areas of skin that are usually a sign of an allergic reaction; also known as hives

**vaccination** – the introduction of vaccine into the body for the purpose of inducing immunity to a specific disease or group of diseases

**vaccine** – a suspension of weakened or killed microorganisms, or other substances that are introduced into the body to induce an immune reaction; the immune reaction is intended to protect the recipient from getting the illness associated with a specific microorganism; newer vaccines are being developed to alter the course of infectious diseases

**varices** – see varix

**varix (pl. varices)** – an abnormally dilated or swollen vein; portal hypertension can cause esophageal varices that can rupture and cause vomiting of large amounts of blood; bleeding esophageal varices are a medical emergency

**vascular** – relating to the blood vessels of the body

**vasculitis** – a general term for a group of diseases that feature inflammation of the blood vessels

**vertigo** – the sensation of dizziness or spinning

**viral clearance** – elimination of a virus or reducing it to the point that it cannot be detected in the blood

**viral load** – the amount of virus present in the blood

**virologist** – a scientist who specializes in the study of viruses

**virology** – the branch of microbiology that is concerned with viruses and viral diseases

**vitamin** – an organic substance that acts as a coenzyme and/or regulator of metabolic processes and is crucial for many bodily functions

**vitamin A** – a fat-soluble vitamin; may be deficient with severe liver disease leading to night blindness, dry skin, and brittle hair and nails

**vitamin B** – a complex of several important vitamins including B1 (thiamine), B2 (riboflavin), B3 (niacin), B6 (pyridoxine), B9 (folic acid), and B12 (cobalamin). As a group, the B vitamins are required for the metabolism of carbohydrates, fats, and amino acids; for proper neural functioning and mood regulation

**vitamin D** – a fat-soluble vitamin; may be deficient with severe liver disease leading to softening of the bones and bone pain

**vitamin E** – a fat-soluble vitamin; may be deficient with severe liver disease leading to a shortage of red blood cells and muscle loss

**vitamin K** – a fat-soluble vitamin; may be deficient with severe liver disease leading to easy bruising and bleeding problems

**WBC** – see white blood cells

**white blood cells** – part of the body's immune system; different kinds of white blood cells include neutrophils, lymphocytes, and macrophages; a change in white blood cell count may indicate a change in hepatitis C disease status

**xanthelasma** – small deposits of fat just under the surface of the skin around the eyes; appear as small, raised, yellowish bumps on the skin

**xanthomas** – small deposits of fat just under the surface of the skin over the joints and/or tendons; appear as small, raised, yellowish nodules

