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A

abdominal aorta

Part of the aorta, the largest artery in the body; it supplies oxygenated blood to the abdominal and pelvic organs and legs.

abscess

A localized infection consisting of pus surrounded by inflamed tissue.

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absorption

1. In radiology, the uptake of energy from radiation by the tissue or medium through which it passes.
2. In radiation or medical physics, the number of disintegrations per second of a radionuclide.

acetaminophen

A drug that reduces pain and fever but not inflammation. A member of the family of drugs called analgesics, it is found in many over-the-counter medications, such as Tylenol®.

adjuvant therapy or treatment

Treatment designed to be contributory or complementary to primary therapy. See also definitive.

afterloaded implant

A brachytherapy treatment in which a remote-controlled machine pushes radioactive material through a delivery device to the site of a tumor.

allergy

A hypersensitive reaction to common, often harmless substances, most of which are found in the environment.

Allopurinol

A drug that lowers an elevated level of uric acid in the blood caused by some cancer treatments.

amniocentesis

The suction of fluid from the amniotic sac through the use of a needle inserted through the abdomen.

amniotic sac

Membrane filled with fluid within the abdomen that holds the embryo/fetus.

anemia

A condition in which too few red blood cells are in the bloodstream, resulting in insufficient oxygen to tissues and organs.

anesthesia

Drugs used to induce loss of sensation for the patient in preparation for operative procedures.

anesthesiologist

A physician specializing in the controlled loss of sensation through anesthesia.

anesthetic

A drug that temporarily produces the loss of ability to sense pain or other sensations.

aneurysm

A ballooning out of a segment of artery caused by disease or weakness in the vessel wall. It may lead to rupture and serious or fatal bleeding.

angina

Cramp-like pain that comes and goes, and is made worse by physical effort. It is a sign that the tissue or organ supplied by a narrowed artery is not getting enough blood or oxygen.

angiocardiology

X-ray imaging of the heart and great vessels made visible by injection of a radiopaque solution.

angiogenesis

Formation of new blood vessels.

angiogenesis inhibitors

Drugs that interfere with the growth of blood vessels in the tumor, thus starving the tumor of the nutrients and oxygen it needs to grow. Also called angiostatic therapy.

angiogram

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An imaging study depicting blood vessels. In a conventional angiogram, a dye is injected into the bloodstream and x-rays are taken to visualize the blood vessels. In other instances, CT or MRI can be used to create three-dimensional pictures of blood vessels.

angiography

Radiography of vessels after the injection of a radiopaque contrast material. Unlike angioplasty, which is an invasive procedure, angiography breaks the skin only for the insertion of a needle for administering a radiopaque catheter and positioning under fluoroscopic control. This technique is used to image arteries in the brain, heart, kidneys, gastrointestinal tract, aorta, neck, chest, limbs and pulmonary circuit.

angioplasty

Reconstitution or reopening of a blood vessel; may involve balloon dilation, mechanical stripping of the inside of the blood vessel, forceful injection of an elastic filamentous protein, or placement of a stent.

antibiotics

A class of medications used to treat bacterial infections by killing or inhibiting the growth of bacteria.

antibodies

Substances that neutralize body toxins and bacteria.

anticoagulant therapy

VIEWED 06/15/2012
The use of anticoagulant drugs to reduce or prevent intravascular or intracardiac clotting.

antiplatelet drug

A medication that interferes with the normal function of blood platelets and thereby reduces the tendency for blood to clot; commonly called a blood thinner.

aorta

The large artery leaving the heart that distributes blood to the entire body through branches.

appendicitis

An inflammation of the appendix, usually caused by a blockage of the opening of the "pouch" and a subsequent infection.

appendix

A wormlike "pouch" several inches long located near the top of the large intestine, in the lower right portion of the abdomen. At this time, the role the appendix plays in the human body is not known.

arachnoid membrane

A thin membrane enclosing the brain and spinal cord. The subarachnoid space lies between the arachnoid membrane and the spinal cord.

argon gas

A colorless, odorless gas found in the air and used in its liquefied state in cryosurgery to freeze and destroy diseased tissue, including cancer cells.

arrhythmia

An abnormal rhythm of the heart.

arteriosclerosis

Hardening of the arteries; types generally recognized are: atherosclerosis, Mönckeberg's arteriosclerosis, and arteriolosclerosis.

arteriovenous fistula

An abnormal connection between an artery and a vein. This can be surgically created for hemodialysis (see dialysis arteriovenous fistula) but can also be caused by trauma. These fistulas can commonly be treated by interventional radiologists.

arteriovenous malformation (AVM)

1. An abnormal communication between an artery and vein that may be present at birth or may result from injury or infection. Blood may flow directly from the artery to the vein, bypassing the small vessels where oxygen and tissue nutrients are exchanged. These unusual malformations are often found in the brain and spinal cord, but may occur anywhere in the body.
2. A tangle of dilated blood vessels that disrupts normal blood flow in the brain.

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artery
Vessels that carry blood away from the heart.

arthritis

Inflammation of a joint or a state characterized by inflammation of joints.

artifact

In radiology, something artificial that appears on a medical image but is not a part of the living tissue being examined. The image distortion could be due to an obstruction, such as a surgical metal clip, or to a problem with the imaging equipment.

ascites

Accumulation of fluid in the chest and abdomen in the setting of liver failure.

atherosclerosis

Arteriosclerosis characterized by irregularly distributed lipid deposits, or plaque, in large and medium-sized arteries; such deposits provoke fibrosis and calcification (hardening of the tissues).

atrophy

A wasting of tissues, organs, or the entire body.

attenuation

Loss of energy of a beam of radiant energy due to absorption, scattering, beam divergence, and other causes as the beam propagates through a medium.

automated needle

An automated needle is a spring-loaded device that cuts and retrieves a small tissue specimen in its collecting chamber.

axillary lymph node dissection

Surgical exploration and removal of lymph nodes from the armpit area, as a part of breast cancer surgery. Some or all of these lymph nodes are examined under a microscope by a pathologist (a physician specializing in the examination of cells and tissues) to see if cancer cells are present.

axillary lymph nodes

Numerous nodes around the axillary (below the shoulder joint) veins which receive the lymphatic drainage from the upper limb, scapular region and pectoral region (including mammary gland); they drain into the subclavian trunk.

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B**balloon angioplasty**

An image-guided procedure in which a balloon-tipped catheter, a long thin, hollow plastic tube, is guided into an artery and advanced to a blockage or narrowing in a blood vessel. The balloon is then inflated to open the vessel, deflated, and removed.

balloon assisted technique

A technique that uses balloons to open narrowed blood vessels.

barium (Ba)

A metallic, alkaline, divalent earth element; atomic no. 56, atomic wt. 137.327. Salts are often used in diagnosis.

baseline

initial

becquerel (Bq)

The SI unit of measurement of radioactivity, equal to 1 disintegration per second; 1 Bq = 0.027×10^{-9} Ci.

benign

Not cancerous. May also be defined as non-malignant. Benign is also used to describe medical conditions that have a mild course.

benign prostatic hyperplasia (BPH)

An enlarged prostate gland common in older men.

bile

A greenish–yellow fluid secreted by the liver, stored in the gallbladder and released through tubular structures called bile ducts into the bowel to help digest fat and carry away waste.

bile ducts

Tubular structures in the liver that carry bile, a greenish–yellow fluid secreted by the liver, to aid in the digestion of fat and transport waste out of the liver.

biliary tract

Also called the biliary system.

Includes the gallbladder and tubular structures called ducts that course through the liver. Bile, a greenish–yellow fluid secreted by the liver, is stored in the gallbladder and released into the bowel through bile ducts to help the small intestine digest fat and carry away waste.

biologically active coils

A type of coil, made of soft platinum wire smaller than a strand of hair and available in different diameters and lengths, used in a procedure called a detachable coil embolization to treat an aneurysm (a bulge) or a blood vessel malformation called a fistula (a false passageway) that occurs in the brain and other parts of the body. Using image guidance, the coils are placed at the site of a bulge or passageway, where it helps block the flow of blood and prevents a rupture of the vessel.

biopsy

VIEWED 06/15/2012
1. Process of removing tissue from living patients for diagnostic examination.
2. A specimen obtained by biopsy.

bladder

A balloon–like organ where urine is stored before being passed from the body.

blood clot

A thickened mass of blood.

blood coagulation

Also called blood clotting.

A process in which blood changes from a free–flowing liquid to a semi–solid gel.

blood oxygenation

The level of oxygen in the blood.

blood thinning agents

Also known as blood thinners. Medicine used to prevent blood clots from forming or getting larger.

bore

The center of the cylindrical shaped magnet (often referred to as a doughnut) within an magnetic resonance imaging (MRI) scanner.

bowel

The part of the digestive system distal to the stomach, consisting of the small and large intestines, that digest and eliminate food.

brachytherapy

Also called internal radiation therapy.

A type of radiation therapy used to treat cancer, involving the placement of a radioactive material, either temporarily or permanently, directly inside the body.

brain herniation

An often fatal condition that results when brain tissue, fluid or blood vessels are pushed outside the skull.

brain mapping

Mapping the brain's surface using small electrodes to stimulate a nerve so its electrical response can be measured. By determining the role of specific nerves in a patient, this technique helps surgeons avoid damage to sensitive areas while operating on the brain.

breast coil

A wire coil placed around the breast that sends and receives radio waves within the magnetic field of an MRI unit to create images.

bronchi

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The large air passages that lead from the trachea (windpipe) to the lungs.

bronchiectasis

An abnormal condition of the bronchi (the "breathing tubes"), often caused by infection. Serious complications may occur, and some patients require surgical removal of the affected part of the lungs.

bronchitis

Inflammation of the mucous membrane of the two subdivisions of the trachea (air tube) that conveys air to and from the lungs.

bronchoscope

An instrument for examination of the trachea and bronchi.

bronchoscopy

Visual inspection of the inside of the trachea and the bronchial passages of the lungs, using a rigid or flexible tube.

bruit

An abnormal sound heard when listening with a stethoscope over an organ or blood vessel such as the carotid artery in the neck.

Budd–Chiari syndrome

A blockage of one or more hepatic veins, which carry blood from the liver back toward the heart.

bulla

A thin-walled air "cyst" within the lung, found in patients with emphysema.

bursa, pl. bursae

A closed sac or envelope lined with a membrane and containing lubricating fluid, usually found or formed in areas subject to friction; e.g., over an exposed or prominent part or where a tendon passes over a bone.

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C**calcification**

The process by which noncellular material in the body becomes hardened due to deposits of calcium and other materials.

calcium score

A number reflecting the degree and extent of calcium deposits in the walls of the coronary arteries, as demonstrated by cardiac computed tomography.

caner
VIEWED 06/15/2012
General term frequently used to indicate any of various types of malignant neoplasms, most of which invade surrounding tissues, may metastasize to several sites, and are likely to recur after attempted removal and to cause death of the patient unless adequately treated.

cardiac catheterization

A diagnostic procedure in which a catheter is placed in a large vein in the leg or arm and advanced to the heart to check for blood pressure within the heart, oxygen in the blood, and/or pumping ability of the heart muscle. (Also see angiography and angioplasty.)

cardiac pacemaker

An electrical device, often implanted, that maintains a normal heart rhythm by stimulating the heart muscle.

cardiologist

A physician specializing in the diagnosis and treatment of heart disease.

carotid artery

Major vessel(s) running through either side of the neck, which supply blood to the brain.

CAT scan

Imaging anatomical information from a cross-sectional plane of the body, each image generated by a computer synthesis of x-ray transmission data obtained in many different directions in a given plane.

Developed in 1967 by British electronics engineer Godfrey Hounsfield, CT has revolutionized diagnostic medicine. Hounsfield linked x-ray sensors to a computer and worked out a mathematical technique called algebraic reconstruction for assembling images from transmission data. In 1973, the Mayo Clinic began operating the first machine in the U.S. Early machines yielded digital images with at least 100 times the clarity of normal x-rays. Subsequently, the speed and accuracy of machines has improved many times over. CT scans reveal both bone and soft tissues, including organs, muscles, and tumors. Image tones can be adjusted to highlight tissues of similar density, and, through graphics software, the data from multiple cross-sections can be assembled into 3-D images. CT aids diagnosis and surgery or other treatment, including radiation therapy, in which effective dosage is highly dependent on the precise density, size, and location of a tumor.

cathartic

A substance that causes evacuation of the bowel.

catheter

1. A tubular instrument to allow passage of fluid from or into a body cavity.
2. Especially a catheter designed to be passed through the urethra into the bladder to drain it of retained urine.
3. A flexible, hollow plastic or rubber tube that may be passed into a blood vessel to withdraw fluids or inject medicine or contrast materials.

catheter angiography

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An examination of blood vessels by injecting contrast material directly into an artery through a small plastic tube.

cauterize

To use heat, usually from radiofrequency energy or a laser, to destroy tissue or seal blood vessels.

cerebral

Relating to the brain.

cerebrospinal fluid

Fluid that surrounds the brain and spinal cord and helps to cushion and protect them.

cervical

Refers to the neck region of the spinal column which includes seven bones, or vertebrae, labeled C-1 through C-7.

cervix

The lower part of the uterus, connecting the uterus with the vagina.

chemotherapy

Treatment of disease by means of chemical substances or drugs; usually used in

reference to neoplastic (cancer) disease.

claustrophobic

A morbid fear of being in a confined place.

clot

To coagulate or turn from a free-flowing liquid to a thickened or semi-solid state.

coagulate

To change from a liquid to a thickened or solid state. Blood that does not flow smoothly through a vessel can coagulate or clot by turning from a free-flowing liquid to a semi-solid gel.

cobalt (Co)

A steel-gray metallic element, atomic no. 27, atomic wt. 58.93320; a bioelement and a constituent of vitamin B12; certain of its compounds are pigments, e.g., cobalt blue.

cobalt-60 radiation therapy

Cobalt-60-based or photon radiation therapy machines are used exclusively to treat brain tumors and abnormalities.

collodion

A liquid that, on evaporation, leaves a protective film over cuts.

VIEWED 06/15/2012**colonoscopy**

Visual examination of the inner surface of the colon by means of a lighted, flexible tubular instrument inserted into the colon through the rectum.

color Doppler

Color Doppler uses a computer to convert the Doppler measurements into an array of colors. This color visualization is combined with a standard ultrasound picture of a blood vessel to show the speed and direction of blood flow through the vessel.

colorectal cancer

Malignant disease affecting the colon and rectum.

colostomy

Establishment of an artificial opening into the colon.

computed tomography (CT)

Sometimes referred to as CAT scan (computerized axial tomography).

Imaging anatomical information from a cross-sectional plane of the body, each image generated by a computer synthesis of x-ray transmission data obtained in many different directions in a given plane.

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computed tomography (CT) angiography

A method of examining blood vessels utilizing x-rays and injection of iodine-containing contrast medium.

conformal radiation therapy

Use of a CT image to tailor the radiotherapy beam to the exact size and shape of a tumor.

congenital

Existing at birth.

congestive heart failure

A condition in which the heart cannot adequately pump blood forward, leading to a back-up of blood in vessels and an accumulation of fluid in body tissues including the lungs.

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constipation

A condition in which bowel movements are infrequent or incomplete.

contrast material

Also referred to as contrast agent or contrast medium. Any internally administered substance that has a different opacity from soft tissue on radiography or computed tomography. Includes:

- Barium or water, used to make parts of the gastrointestinal tract opaque.
- Iodine in water, used for arthrography.
- Water soluble iodine, used to make blood vessels opaque; to demonstrate the inner structures of the urinary tract (kidneys, ureters and bladder); and to outline joints (the spaces between two bones).
- Iodine mixed with water or oil may be used to evaluate the fallopian tubes and lining of the uterus.
- Sterile saline (salt water) is used during hysterosonography.
- May refer to air occurring naturally or introduced into the body.
- Paramagnetic substances used in magnetic resonance imaging.

core needle biopsy

A type of biopsy in which a large hollow needle is inserted through the skin to the site of an abnormal growth to collect and remove a sample of cells for analysis. This procedure uses an automated needle, which obtains one sample of tissue at a time and is re-inserted several times.

coronary arteries

The arteries that supply freshly oxygenated blood to the heart muscle.

coronary artery disease

A condition involving the narrowing of the coronary arteries that carry blood and oxygen to the heart muscle.

coronary bypass surgery

A surgical means of rerouting blood in the coronary artery system around diseased vessels.

cranial

Related to the bony skull known as the cranium that holds the brain.

Crohn's disease (also known as regional enteritis)

A moderately severe chronic inflammation of the intestine, especially of the small intestine, of unknown cause, involving the obstruction of the lower part of the small bowel and less frequently other parts of the gastrointestinal tract. It is characterized by patchy deep ulcers that may cause abnormal passages within the bowel, and narrowing and thickening of the bowel. Symptoms include fever, diarrhea, cramping abdominal pain, and weight loss.

cryoprobe

An instrument used to apply extreme cold to a selected anatomic area.

cryosurgery

Also known as cryotherapy, cryoablation or targeted cryoablation therapy. A minimally invasive treatment that uses extreme cold in the form of liquid nitrogen or argon gas to freeze and destroy diseased tissue, including cancer cells.

curie (C, c, Ci)

A unit of measurement of radioactivity, 3.70×10^{10} disintegrations per second; formerly defined as the radioactivity of the amount of radon in equilibrium with 1 gm. of radium; superseded by the S.I. unit, the becquerel (1 disintegration per second). Origin [Marie (1867–1934) and Pierre (1859–1906) Curie, French chemists and physicists and Nobel laureates]

cyclotron

A type of particle accelerator in which charged particles are propelled by an alternating electric field between two large electrodes in a constant magnetic field created by two large magnets. The particles are injected at the center of the magnet and spiral outward as their energy increases. Protons produced in a cyclotron can be used to treat cancer, and cyclotron-produced protons can create radioisotopes for nuclear medical procedures.

cystography

Radiography of the bladder, following injection of a radiopaque substance.

cysts

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Abnormal sacs containing gas, fluid, or a semisolid material, with a membranous lining.

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D

debulk

To reduce the size of a tumor without completely eliminating it, by surgical or other means. This often makes the tumor more responsive to chemotherapy or radiotherapy.

deep vein thrombosis

A condition in which a blood clot forms in a main vein that returns blood flow from the extremities back to the heart and lungs. This type of clot may grow big enough to completely block the vein or can pose a serious risk if part of it breaks off and travels to the lungs.

defibrillator

Also called implanted cardiac defibrillator (ICD). A pacemaker-like device that continuously monitors the heart rhythm and delivers lifesaving shocks if a dangerous heart rhythm is detected.

definitive treatment

Primary treatment designed to provide a disease cure.

delivery device

In brachytherapy treatment of cancer, a means of delivering a sealed radioactive substance to the site of a tumor inside the body, such as a catheter, tiny needle or applicator.

densitometry

A method for imaging density.

density

Thickness or mass.

deoxyribonucleic acid (DNA)

Acid found in cell nuclei that is the basis of heredity.

diabetes (diabetes mellitus)

A metabolic disease in which carbohydrate utilization is reduced and that of lipid and protein enhanced; it is caused by an absolute or relative deficiency of insulin and is characterized, in more severe cases, by chronic hyperglycemia, glycosuria, water and electrolyte loss, ketoacidosis, and coma; long-term complications include development of disorders of the nervous system, eyes and kidneys; generalized degenerative changes in large and small blood vessels, and increased susceptibility to infection.

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diagnostic ultrasound

The use of ultrasound to obtain images for medical diagnostic purposes, typically employing frequencies ranging from 2 MHz to about 12 MHz.

dialysis

A method of removing waste materials from the body when the kidneys are not working properly.

dialysis arteriovenous fistula

A connection surgically created between an artery and vein in the arm of patients who need to undergo hemodialysis. Hemodialysis is a process in which blood is removed from the body, cleansed and then returned to the body. This is necessary for patients in who have had kidney failure. The fistula causes the vein to become enlarged, and allows blood to be easily withdrawn and replaced during dialysis.

diaphragm

1. A plate-like muscular structure that separates the chest from the abdominal cavity.
2. The dividing membrane between the chest and abdominal cavity.

diarrhea

An abnormally frequent discharge of semisolid or fluid fecal matter from the bowel.

dietitians

Dietitians work with patients to help maintain nutrition. They monitor patients' weight and nutritional problems. Dietitians educate patients and may provide them with recipes and nutritional supplements to improve their nutritional status before, during and after treatment. Dietitians attend four years of college then usually take part in a one-year internship. The American Dietetic Association registers dietitians who have passed a professional examination.

digital rectal exam

An examination of the lower rectum and the prostate gland in males to check for abnormalities. The term "digital" refers to the clinician's use of a lubricated finger to conduct the exam.

dilatation and curettage (D & C)

A procedure in which the cervix is dilated and the inner lining of the uterus is scraped to remove the uterine contents.

dilator

A device or substance used to enlarge a hollow structure or opening.

dissection

A tear in the wall of a blood vessel that allows blood under pressure to flow between the layers of the wall, making the tear worse.

diverticulitis

An inflammation or infection of the diverticulum.

diverticulum

A pouch or a pocket-like opening in the bowel wall, usually in the colon. You might think of it as a "bubble" through a weak point in the bowel wall.

DNA

Acid found in cell nuclei that is the basis of heredity.

Doppler ultrasound

An application of diagnostic ultrasound used to detect moving blood cells or other moving structures and measure their direction and speed of movement. The Doppler effect is used to evaluate movement by measuring changes in frequency of the echoes reflected from moving structures.

In many instances, Doppler ultrasound has replaced x-ray methods such as angiography, as a method to evaluate blood vessels and blood flow. Doppler ultrasound permits real-time viewing of blood flow that cannot be obtained by other methods. Doppler ultrasound has proved a boon in all areas of ultrasound, aiding in the evaluation of the major arteries and veins of the body, the heart, and in obstetrics for fetal monitoring.

Types of Doppler ultrasound include:

- Color Doppler
- Power Doppler
- Spectral Doppler

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Dosimetrists carefully calculate the dose of radiation to make sure the tumor gets enough radiation. They develop a number of treatment plans that can best destroy the tumor while sparing the normal tissues. Many of these treatment plans are very complex. Dosimetrists work with the doctor and the medical physicist to choose the treatment plan that is just right for each patient. Many dosimetrists start as radiation therapists, then, with very intensive training, become dosimetrists. Others are graduates of one-to-two-year dosimetry programs. The Medical Dosimetrist Certification Board certifies dosimetrists.

ductal carcinoma in situ (DCIS)

A breast cancer that has not spread beyond the lining (epithelium) of the milk ducts into the surrounding breast tissue. While DCIS must be treated to prevent it from developing into an invasive breast cancer, it is not harmful at this stage.

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E**edema**

An accumulation of an excessive amount of watery fluid in cells, tissues, or serous cavities.

electrocardiogram

Also called EKG or ECG.

A test that records the electrical activity of the heart that is used in diagnosing some heart abnormalities.

electromagnetic radiation

Radiation consisting of electric and magnetic waves that travel at the speed of light, such as light, radio waves, gamma rays and x-rays.

electronic detector

The part of a digital imaging system that captures and converts x-rays as they pass through a patient into digital signals which are in turn sent to a computer to produce images.

embolic agent

A material used to block off blood flow through a vessel.

embolism

A blood clot (a thickened mass of blood) that breaks loose, travels through the bloodstream and lodges in either an organ or artery forming a complete blockage in blood flow.

embolization

The movement of a blood clot, piece of tissue, or pocket of air or gas from where it forms through the bloodstream until it lodges in place, cutting off the flow of blood with its oxygen and tissue nutrients. Catheter embolization is the deliberate introduction of foreign ("embolic") material such as gelatin sponge or metal coils to stop bleeding or cut off blood flowing to a tumor or arteriovenous malformation.

embolus, pl. emboli

A plug, composed of a detached blood clot, mass of bacteria, or other foreign body, blocking a vessel.

embryo

In humans, the developing organism from conception until approximately the end of the second month; developmental stages from this time to birth are commonly designated as fetal.

emphysema

A condition of the lung characterized by increase beyond the normal in the size of air spaces, with destructive changes in their walls and reduction in their number. Symptoms are undue breathlessness on exertion, due to the combined effect (in varying degrees) of reduction of alveolar (air sac) surface for gas exchange, ventilation-perfusion imbalance, and collapse of smaller airways with trapping of alveolar gas occurring predominantly in expiration; this causes the chest to be held in the position of inspiration ("barrel chest"), with prolonged expiration and increased residual volume; symptoms of chronic bronchitis often, but not necessarily, coexist.

encephalography

Radiographic representation of the brain.

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encephalopathy

An alteration of normal brain function that can lead to confusion.

endocrine gland

1. A gland that produces and secretes hormones into the blood or lymph nodes, exerting powerful effects on specific tissues throughout the body.
2. An organ consisting of specialized cells that produces and sends hormones into the bloodstream, affecting various processes throughout the body.

endometrial cavity

The space within the walls of the endometrium.

endometrium

The mucous membrane that forms the inner layer of the uterine wall; the thickness of the endometrium undergoes marked changes with the menstrual cycle.

endorectal coil

A wire coil that is inserted through a small plastic tube into the rectum as part of a magnetic resonance imaging (MRI) exam to obtain more detailed images of the prostate gland or other internal body structures.

endoscope

An illuminated optical instrument used to examine inside the body.

endoscopy

The use of an illuminated optical instrument to visualize the interior of the body and its organs.

endovaginal

Within the vagina (the genital canal in the female, extending from the uterus to the vulva).

endovaginal ultrasonography

Pelvic ultrasonography using a probe inserted into the vagina.

endovenous

Within the vein.

endovenous ablation

A minimally invasive treatment that uses heat to cauterize or burn enlarged veins in the legs, a condition called varicose veins.

enema

A preparation that involves injecting liquid into the intestine through the rectum, or administering drugs or food to help clear the bowel.

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epididymis

A long, tightly coiled tube that lies behind each testicle. The epididymis collects the sperm made by the testicles.

epididymitis

An inflammation of the epididymis.

epidural analgesia

Injection of a local anesthetic into the epidural space of the spine to prevent or eliminate pelvic pain.

esophagitis

Inflammation of the esophagus, the tube-like structure connecting the throat with the stomach.

esophagus

The "food tube" which connects the mouth to the stomach.

excisional biopsy

A type of surgical biopsy in which an entire lesion or abnormal group of cells and tissue as well as a surrounding margin of normal-appearing tissue are removed.

external beam therapy

VIEWED 06/15/2012
External beam therapy is used to aim highly focused beams of radiation at the edges of the site where cancer is found in order to destroy any abnormal cells and prevent the growth or regrowth of the tumor.

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F**fallopian tube**

One of the two tubes extending from the uterus to the ovaries, providing a path by which the ovum, or egg, travels from the ovary to the uterus during ovulation.

false positive test result

A test result that indicates cancer is present when it is not.

femoral artery

A major artery that supplies blood to the lower extremity.

ferro

Prefix designating the presence of metallic iron.

ferromagnetic

The presence of metallic iron or of the divalent ion Fe²⁺ that possesses magnetism.

fetus

In humans, the product of conception from the end of the eighth week to the moment of birth.

fibroadenoma

A benign tumor usually occurring in breast tissue.

fibrocystic

A common and benign (non-cancerous) condition of cysts in the breast, characterized by lumpiness and sometimes discomfort.

fibroid

Resembling or composed of fibers or fibrous tissue.

fibroid tumor

Masses of fiber and muscle tissue in the wall of the uterus, also known as myomas.

fine needle aspiration

A type of biopsy in which a small needle is inserted through the skin to the site of an abnormal growth to collect and remove a sample of cells for analysis.

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fistula

An abnormal connection or false passageway between the body's organs and or blood vessels.

fluoroscope

A device that projects radiographic (x-ray) images in a movie-like sequence onto a screen monitor.

fluoroscopy

Examination of the tissues and deep structures of the body by x-ray, using the fluoroscope.

Foley catheter

A flexible plastic tube (a catheter) inserted into the bladder to provide continuous urinary drainage.

fractionation

The process of administering a dose of radiation in smaller units over time, as opposed to a single large dose, to minimize tissue damage.

fracture

A partial or complete break in a bone.

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G**gadolinium**

An element used in contrast media for magnetic resonance imaging.

gallbladder

A pear-shaped receptacle on the inferior surface of the liver, in a hollow between the right lobe and the quadrate lobe; it serves as a storage reservoir for bile.

gamma camera

A camera that records the distribution of a chemical containing a radionuclide that is attracted to a specific organ or tissue of interest.

Gamma Knife

A cobalt-60 based radiation therapy machine used to treat brain tumors and abnormalities. The Gamma Knife delivers 201 beams of highly focused gamma rays to the treatment site.

gamma radiation

(Also called gamma rays.) A very high frequency form of electromagnetic radiation that consists of photons emitted by radioactive elements. Gamma rays can injure and destroy body cells and tissue, especially cell nuclei.

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gangrene

Necrosis (death of one or more cells, or of a portion of tissue or organ) due to obstruction, loss, or diminution of blood supply; it may be localized to a small area or involve an entire extremity or organ (such as the bowel), and may be wet or dry.

gantry

A frame housing the x-ray tube, collimators, and detectors in a CT or radiation therapy machine, with a large opening into which the patient is inserted; a mechanical support for mounting a device to be moved in a circular path.

gastrointestinal (GI)

Relating to the stomach and intestines.

gastropathy

Engorgement of the veins in the wall of the stomach, which can also cause severe bleeding.

gastrostomy

Establishment of a new opening into the stomach.

gating

The use of an electronic signal from the pumping of the heart to obtain images of heart

contractions.

gene therapy

Treatment based on alteration of genetic material.

general anesthesia

The use of medications called anesthetics to produce a controlled state of unconsciousness or sleep in order to relieve the sensation of pain throughout the body during a surgical or other medical operation.

genetic marker

A specific gene or other identifiable portion of DNA that can be used to identify an individual disease or trait.

genetically engineered tumor vaccines

A DNA molecule that is broken into fragments and then rearranged to create an altered microorganism that when administered, induces immunity.

gland

A group of cells that secrete a substance needed by the body.

Glucophage® (Metformin)

Medication prescribed for diabetics to help the body respond better to its own insulin and decrease glucose production by the liver, ultimately helping to control a patient's blood sugar level. Bristol-Myers Squibb, the manufacturer of Glucophage, recommends that:

- Glucophage should be stopped at the time of or prior to the procedure.
- Glucophage should then be withheld for 48 hours after the procedure.
- Once renal function is found to be normal, Glucophage therapy can be started again.

glucose

A major source of energy for human function. During the digestive process, carbohydrates break down into this sugar. It is then carried through the bloodstream to the body's cells where it is converted to energy or stored.

goiter

An enlarged thyroid gland, usually evident as a pronounced swelling in the neck.

GORE-TEX

A patented commercial product known as a waterproof laminate that has multiple uses, including as a material for surgical implants.

graft

1. Any free (unattached) tissue or organ for transplantation.
2. To transplant such structures.

Grave's disease

A condition, also called hyperthyroidism, in which the thyroid gland produces more thyroid hormone than the body needs. Symptoms include an enlarged thyroid gland, rapid heart rate, and high blood pressure.

great saphenous vein

The longest vein in the body extending from the foot up the inner thigh to the groin.

guide wire

A thin wire used to guide the placement of a catheter within the body during a minimally invasive procedure.

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H**hemangiomas**

Raised birthmarks that consist of a clump of blood vessels that did not grow normally. They are often found on the face in many sizes and shapes and are usually blue, red, or purple.

hematoma

A collection of blood formed when small blood vessels are damaged, causing bleeding into the tissues.

hemodialysis

A procedure often required at regular intervals by patients whose kidneys no longer are able to remove waste materials from the blood. A machine performs this function instead and the cleansed blood then is returned to the patient.

heparin

A drug that thins the blood and helps to prevent abnormal blood clotting.

hepatic vein

There are three hepatic veins: the right, middle, and left hepatic veins drain blood from the liver back toward the heart.

hepatocellular carcinoma

The most common type of primary liver cancer that starts in the main cells of the liver.

hepatoma

A malignant or cancerous tumor that arises in the liver.

herniated disk

Protrusion of a degenerated or fragmented vertebral disk with potential compression of nerves in the spine.

high-dose rate (HDR) brachytherapy

One of two types of temporary brachytherapy, a radiation therapy treatment for cancer that involves the placement of a radioactive material directly inside the body, in or near a tumor, for a specific amount of time and then withdrawn. In HDR brachytherapy,

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a high dose of radiation is delivered to the tumor in a short burst, lasting only a few minutes. This treatment may be repeated several times in a day or a number of times over one or more weeks.

hives

Confined, short-term elevation or irregular fluid-filled spot on the skin, slightly reddened, often changing in size and shape and extending to adjacent areas. Suddenly erupts and is usually accompanied by intense itching; usually produced by exposure to allergenic substances in susceptible persons.

hormone

A complex chemical substance produced in one part or organ of the body that sets the pace for the activity of an organ or group of cells in another part of the body.

hospice

A family-centered system of care that attempts to keep chronically ill and terminal patients as comfortable and active as possible.

hydrocephalus

A condition marked by an excessive accumulation of fluid resulting in enlarging of the brain cavities and raised pressure within the skull; may also result in enlargement of the skull and wasting of the brain.

hyperfractionation

The process of administering a dose of radiation in smaller units two to three times a day, as opposed to a larger amount once a day.

hyperparathyroidism

An excessive hormone production by the parathyroid gland(s).

hyperthyroidism

A condition, also called Grave's disease, in which the thyroid gland produces more thyroid hormone than the body needs. Symptoms include an enlarged thyroid gland, rapid heart rate, and high blood pressure.

hypothyroidism

A condition in which the thyroid gland does not produce enough thyroid hormone for the body's needs. Symptoms include weight gain, energy loss, and dry skin.

hysterectomy

Surgical removal of the uterus.

hysterosalpingography

Radiography of the uterus and fallopian tubes after the injection of radiopaque material.

hysterosonography

Sonography of the uterus and fallopian tubes using a transvaginal probe following the

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injection of sterile saline into the uterus.

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I

ibuprofen

A non-steroidal anti-inflammatory drug (NSAID) available over-the-counter.

image recording plate

Part of an electronic detector used in a digital imaging system. An x-ray machine produces a small burst of radiation that passes through the body, recording an image either on photographic film or, in a digital system, on the image recording plate of an electronic detector, a device that converts the x-rays into digital signals which are in turn sent to a computer to produce images.

image-guided biopsy

The use of imaging modalities, such as ultrasound, mammography or MRI, to assist in targeting a lesion too small to be felt so that cells can be removed from the suspicious area and examined under a microscope to determine whether the abnormality is cancerous.

immunotherapy

1. The practice of giving small amounts of an allergy-producing substance in order to stimulate the formation of antibody that will neutralize it.
2. Use of the body's immune system to fight tumors.

implant

1. To graft or insert.
2. Material inserted or grafted into tissues.
3. In dentistry, a graft or insert set in or onto the tooth socket prepared for its insertion.
4. In orthopedics, a metallic or plastic device employed in joint reconstruction.

implanted cardiac defibrillator (ICD)

A pacemaker-like device that continuously monitors the heart rhythm and delivers lifesaving shocks if a dangerous heart rhythm is detected.

implanted port

A catheter connected to a quarter-sized disk that is surgically placed just below the skin in the chest or abdomen. The tube is inserted into a large vein or artery directly into the bloodstream. Fluids, drugs, or blood products can be infused or blood drawn through a needle that is stuck into the disk. Examples of manufacturer's names: Port-o-cath, Infusaport, Lifeport.

impotence

Inability of the male to maintain erection and engage in sexual intercourse.

in situ breast cancer

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The early stage of cancer when it is confined to the ducts of the breast where it began and has not invaded the surrounding fatty tissues.

incentive spirometer

A breathing apparatus that helps patients inflate their lungs and exercise breathing muscles to prevent the onset of pneumonia following surgery.

incisional biopsy

A type of surgical biopsy in which part of a lesion or abnormal group of cells is removed.

incontinence

Inability to prevent the discharge of urine or feces.

inferior vena cava

The large vein that returns blood from the legs and abdomen to the heart.

inferior vena cava (IVC) filter

A medical device that is implanted in the inferior vena cava, the large vein that returns blood from the legs to the heart, to prevent blood clots in the lower body from traveling to the heart or lungs.

inflammation

The protective response of body tissues to irritation or injury. Signs include redness, heat, swelling and pain.

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infusion

Introduction of a fluid, nutrient, or medication directly into a vein by means of gravity flow.

infusion catheter

A catheter connected to an implanted port (a quarter-sized disk that is surgically placed just below the skin in the chest or abdomen). The tube is inserted into a large vein or artery directly into the bloodstream. Fluids, drugs, or blood products can be infused or blood drawn through a needle that is stuck into the disk. Examples of manufacturer's names: Port-o-cath, Infusaport, Lifeport.

internal jugular vein

One of a pair of neck veins that collect blood from the brain and face and convey it toward the heart.

internal radiation therapy

A type of radiation therapy used to treat cancer, involving the placement of a radioactive material, either temporarily or permanently, directly inside the body.

internist

A physician specializing in the diagnosis and treatment of disorders of the internal organs.

interstitial lung disease

A respiratory disorder causing shortness of breath on effort. In time the lung tissue may become severely scarred. While some patients recover, others develop respiratory failure or heart failure.

interventional radiologist

A radiologist who specializes in the use of fluoroscopy, CT, and ultrasound to guide passage through the skin by needle puncture, including introduction of wires and catheters for performing procedures such as biopsies, draining fluids, inserting catheters, or dilating or stenting narrowed ducts or vessels.

interventional radiology

The clinical subspecialty that uses fluoroscopy, CT, and ultrasound to guide percutaneous (through the skin) procedures such as performing biopsies, draining fluids, inserting catheters, or dilating or stenting narrowed ducts or vessels.

intervertebral disks

Disk-shaped pads of fibrous tissue that are interposed between the vertebrae.

intracranial

Within the skull.

intracranial aneurysm

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A ballooning out of the wall of an artery inside the brain; it may lead the vessel to rupture and bleed heavily.

intraoperative

During surgery.

intraoperative cryotherapy

Cryotherapy is a minimally invasive treatment that uses extreme cold to freeze and destroy diseased tissue, including cancer cells. In an intraoperative cryotherapy procedure, tissue inside the body is treated by inserting a cryoprobe or a series of small needles through the skin and delivering liquid nitrogen or argon gas to the site of the diseased tissue.

intraoperative radiation therapy

Radiation treatment of cancer or other diseases done during surgery.

intraosseous

Situated within, occurring within, or administered by entering a bone.

intraosseous venography

A procedure in which an x-ray, or venogram, is taken of a bone after a special dye is injected into bone marrow, the soft substance that fills the hollow center of most bones.

intrauterine

Within the uterus.

intravenous ('inside a vein')

Frequently a needle will be placed in a vein, often a large arm vein, to deliver fluids and medications, withdraw blood samples, and transfuse blood.

intravenous pyelography (IVP)

Radiography of kidneys, ureters, and bladder following injection of contrast medium into a peripheral vein.

invasive

An invasive procedure is typically an "open" operation, such as appendectomy, which requires a surgical incision for exposure of deep structures or organs for performance of an intervention.

invasive breast cancer

Cancer that has spread beyond the layer of tissue in which it first developed and is growing into surrounding, healthy tissues.

iodine

A non-metallic element found in table salt, seawater and in plants and animals that grow in the sea. The human body requires small amounts of iodine for healthy growth and development.

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ionizing radiation

Radiation of sufficient energy to dissociate atoms or molecules into electrically charged atoms or radicals in the irradiated material.

irradiation

1. The subjective enlargement of a bright object seen against a dark background.
2. Exposure to the action of electromagnetic radiation (e.g., heat, light, x-rays).

irritable bowel syndrome

Characterized by abdominal pain and altered bowel function – alternating bouts of constipation and diarrhea.

isotope

One of two or more nuclides that are chemically identical, having the same number of protons, yet differ in mass number, since their nuclei contain different numbers of neutrons; individual isotopes are named with the inclusion of their mass number in the superior position (¹²C) and the atomic number (nuclear protons) in the inferior position (₆C). In former usage, the mass numbers follow the chemical symbol (C-12).

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J

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K**kidney**

One of the two organs that excrete the urine. The kidneys are bean-shaped organs (about 11 cm long, 5 cm wide, and 3 cm thick) lying on either side of the backbone.

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L**laparoscope**

An instrument used to examine the lining of the abdominal wall.

laparoscopy

1. Examination of a body cavity such as the pelvis using an illuminated tube that is inserted through a small incision.
2. Examination of the lining of the abdominal wall with a laparoscope.

laser

A device emitting intense, focused light energy that can destroy tissues as an alternative to conventional surgical removal.

lateral view

On the side.
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laxative

1. Mildly cathartic; having the action of loosening the bowels.
2. A mild cathartic; a remedy that moves the bowels slightly without pain or violent action.

leiomyoma

A benign tumor derived from smooth muscle. In the uterus, commonly called a fibroid.

lesion

An area of abnormal tissue on the skin or within the body caused by injury or disease. A lesion may be benign (noncancerous) or malignant (cancerous).

lethal-ice

Water frozen -40°C (-40°F) or less, which kills cells.

Lifeport

Manufacturer's name. See implanted port.

linear accelerator (LINAC)

A device imparting high velocity and energy to atomic and subatomic particles; an important device for radiation therapy.

liquid nitrogen

Nitrogen gas in a liquid state. The extreme cold of liquid nitrogen at -196°C is used in cryosurgery to freeze and destroy diseased tissue, including cancer cells.

lithotripsy

The crushing of a stone in the renal pelvis, ureter, or bladder, by mechanical force or sound waves.

liver

The largest gland of the body, lying beneath the diaphragm; it is of irregular shape and weighs from 1 to 2 kg (2 to 4 pounds). It secretes the bile and is also of great importance in both carbohydrate and protein metabolism.

lobules

Glands that make breast milk.

local anesthesia

The use of medications called anesthetics to produce a temporary loss of sensation in a specific area of the body during a surgical or other medical procedure. While the local area injected with the anesthetic becomes numb, the patient remains awake and responsive.

localization

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1. Limitation to a definite area.
2. The reference of a sensation to its point of origin.
3. The determination of the location of a morbid process.

Low dose rate (LDR) brachytherapy

A radiation therapy treatment for cancer that involves the placement of a radioactive material directly inside the body, in or near a tumor, for a specific amount of time and then withdrawn. In LDR brachytherapy, the patient is treated with a low dose of radiation for hours at a time.

lumbar

Refers to the low back region of the spinal column, which includes five bones, or vertebrae, labeled L-1 through L-5.

lumbar puncture

Placement of a hollow needle in the fluid-filled space surrounding the lower part of the spinal cord.

lumen, pl. lumina, lumens

The space in the interior of a tubular structure, such as an artery or the intestine.

lumpectomy

The surgical removal of a small tumor (a lump). Lumpectomy generally refers to the

removal of a lump from the breast as an alternative to mastectomy, the removal of the entire breast including the lump.

lung

One of a pair of viscera occupying the pulmonary cavities of the thorax, the organs of respiration in which aeration of the blood takes place. As a rule, the right lung is slightly larger than the left and is divided into three lobes (an upper, a middle, and a lower or basal), while the left has but two lobes (an upper and a lower or basal). Each lung is irregularly conical in shape, presenting a blunt upper extremity (the apex), a concave base following the curve of the diaphragm, an outer convex surface (costal surface), an inner or mediastinal surface, a thin and sharp anterior border, and a thick and rounded posterior border.

lymph

A clear, transparent, sometimes faintly yellow and slightly opalescent fluid that is collected from the tissues throughout the body, flows in the lymphatic vessels (through the lymph nodes), and is eventually added to the venous blood circulation. Lymph consists of a clear liquid portion, varying numbers of white blood cells (chiefly lymphocytes), and a few red blood cells.

lymph node biopsy

The removal of all or part of a lymph node to be examined under a microscope by a pathologist (a physician specializing in the examination of cells and tissues) to see if cancer cells are present.

lymph nodes

Small structures throughout the body that filter lymph fluid and collect inflammatory cells, keeping them from spreading infection.

lymphangiography

A diagnostic x-ray procedure that requires surgical incisions and injections directly into the lymphatic system. This procedure has been replaced by lymphoscintigraphy.

lymphatic system

A network of small channels similar to blood vessels that circulate fluid (called lymph) and cells (lymphocytes) of the immune system throughout the body.

lymphedema

A condition in which tissue fluid does not drain normally through the lymphatic system, causing swelling, usually of a leg or arm.

lymphocytes

A type of white blood cell that helps the body fight infection.

lymphoscintigraphy

A special type of noninvasive nuclear medicine imaging that provides pictures called scintigrams of the lymphatic system.

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M

magnetic field gradient

In magnetic resonance imaging, a magnetic field that varies with location, superimposed on the uniform field of the magnet, to alter the resonant frequency of nuclei and allow recovery of their spatial position.

magnetic resonance angiography (MRA)

A method of angiography utilizing the magnetic properties of tissues and body fluids rather than x-rays to record images.

magnetic resonance cholangiopancreatography

Magnetic Resonance Cholangiopancreatography (MRCP) is an examination of the bile ducts and pancreas using magnetic resonance imaging.

magnetic resonance imaging (MRI)

A diagnostic radiological modality, using nuclear magnetic resonance technology, in which the magnetic nuclei (especially protons) of a patient are aligned in a strong, uniform magnetic field, absorb energy from tuned radiofrequency pulses, and emit radiofrequency signals as their excitation decays. These signals, which vary in intensity according to nuclear abundance and molecular chemical environment, are converted into sets of tomographic (selected planes) images by using field gradients in the magnetic field, which permits 3-dimensional localization of the point sources of the signals.

malignant

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Cancerous cells, also called a tumor, are able to grow into surrounding tissue, spread to other parts of the body and destroy normal cells. Malignant is also used to describe other medical conditions that are severe and becoming progressively worse.

mammography

Imaging examination of the breast by means of x-rays, used for screening and diagnosis of breast disease. Ultrasound and magnetic resonance may also be used to image the breast.

mediastinum

The central part of the chest cavity, behind the sternum and between the two lungs.

medical radiation physicists

Qualified medical physicists work directly with the doctor in the treatment planning and delivery. They oversee the work of the dosimetrist and help ensure that complex treatments are properly tailored for each patient. Qualified medical physicists are responsible for developing and directing quality control programs for equipment and procedures. They are responsible for making sure the equipment works properly. Medical radiation physicists take precise measurements of radiation beam characteristics and do other safety tests on a regular basis. Qualified medical physicists have doctorates or master's degrees. Qualified medical physicists have completed four year of college. They also have had two to four years of graduate school and typically one to two years of clinical physics training. They are certified by the American Board of Radiology or the American Board of Medical Physics.

melanoma

A malignant tumor, usually in the skin, that develops from a pigmented lesion over a period of months or years.

membrane

A thin layer of tissue that covers a surface, lines a cavity, or divides space in the body.

meninges, plural of meninx

Any membrane; specifically, one of the membranous coverings of the brain and spinal cord.

menopause

The point in a woman's life when she stops menstruating, or having periods.

mesentery

Abdominal membrane that connects the intestines to the abdominal cavity.

metabolic rate

The amount of energy or heat expended by the body in a given unit of time as a result of the body's metabolism, or all of its chemical processes.

metabolism

The sum total of all chemical processes in the body that result in growth, energy, waste elimination and other body functions following food digestion and the distribution of nutrients in the blood.

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metastases

The spread of a disease process from one part of the body to another, as in the appearance of abnormal tissue growths (malignant or nonmalignant) in parts of the body remote from the site of the primary tumor.

metastasize

To spread to another part of the body, usually through the blood vessels, lymph channels, or spinal fluid.

metastatic tumor

A cancerous tumor formed when cancer cells located elsewhere in the body break away and spread to a new site.

Metformin

Medication prescribed for diabetics to help the body respond better to its own insulin and decrease glucose production by the liver, ultimately helping to control a patient's blood sugar level. Bristol-Myers Squibb, the manufacturer of Glucophage, recommends that:

- Glucophage should be stopped at the time of or prior to the procedure.
- Glucophage should then be withheld for 48 hours after the procedure.
- Once renal function is found to be normal, Glucophage therapy can be started again.

microstent

A small wire mesh tube-like device used to hold open an artery following balloon angioplasty.

midline catheter

A special type of catheter used in a vascular access procedure that is inserted inside a major vein for a period of weeks so that blood can be repeatedly drawn or medication and nutrients can be injected into the patient's bloodstream on regular basis. Unlike a standard intravenous catheter (IV) which is for short term use, a vascular access catheter is more durable and does not easily become blocked or infected. The midline catheter is 4–6 inches in length.

milk ducts

Small tubes that carry breast milk from the lobule to the nipple.

milliroentgens

One-thousandth of a roentgen (the international unit of exposure dose for x-rays or gamma rays).

minimally invasive

A minimally invasive procedure requires a small skin puncture or very limited incision to perform the intervention, which typically involves the insertion of miniaturized instruments. Common examples of minimally invasive procedures would be heart catheterization or temporary placement of an implanted port for chemotherapy.

modality

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A form or application or employment of a therapeutic agent or regimen.

monoclonal antibodies

Proteins composed of laboratory-developed identical molecules used to treat disease. Also called genetically engineered antibodies.

mortality

The rate of death from a particular disease or condition in a defined population.

MR spectroscopy

A form of magnetic resonance imaging that provides chemical information on an organ or structure of the body at the cellular level.

multiple myeloma

An uncommon disease that occurs more frequently in men than in women and is associated with anemia, hemorrhage, recurrent infections, and weakness.

musculoskeletal

Relating to muscles and to the skeleton, as, for example, the musculoskeletal system.

myelogram

An x-ray taken after injecting contrast material into the space surrounding the spinal

cord. Its purpose is to identify spinal lesions caused by disease or injury.

myelography

A radiographic procedure using contrast material to visualize the spinal column and its contents.

myocardial infarction

A sudden insufficiency of blood supply that produces the death on the cellular level of a section of the heart wall.

myocardial perfusion scan

The most common Cardiac Nuclear Medicine procedure, which results in imaging of blood-flow patterns to the heart muscles.

myomas

Masses of fiber and muscle tissue in the wall of the uterus, also known as fibroid tumors. Although these tumors are not cancerous, they may cause heavy menstrual bleeding, pain in the pelvic region and pressure on the bladder or bowel.

myometrium

The muscular walls of the uterus.

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narcotic

A substance that is used medically to relieve pain and/or produce a state of drowsiness or sleep.

nasal cavity

A system of air channels connecting the nose with the back of the throat.

natural background exposure

Radiation is a natural part of life. It has existed since the beginning of time and is an integral part of the universe in which we live. Life as we know it on earth has evolved in the presence of radiation. Radiation comes to us from many sources both natural and man-made. These sources include cosmic radiation from outer space, radiation from the soil and buildings, and natural isotopes in our own bodies. Cosmic radiation and terrestrial radiation vary with location.

necrosis

The death of living tissue.

needle aspiration

The removal of living tissue for microscopic examination by suction through a fine needle attached to a syringe. The procedure is used primarily to obtain cells from a lesion containing fluid.

needle biopsy

Removal of tissue or suspensions of cells from living patients through a small needle for diagnostic examination.

needle electrode

A fine wire through which electrical current may flow in or out when attached to a power source. There are two types of needle electrodes: simple straight needles and a straight, hollow needle that contains several retractable electrodes that extend when needed. A needle electrode is used to carry high frequency electrical currents that create heat to ablate or destroy diseased tissue (called radiofrequency ablation) or seal blood vessels.

neoplasm

An abnormal tissue that grows by cellular proliferation more rapidly than normal and continues to grow after the stimuli that initiated the new growth cease. Neoplasms show partial or complete lack of structural organization and functional coordination with the normal tissue, and usually form a distinct mass of tissue, which may be either benign (benign tumor) or malignant (cancer).

nephrogenic

Of or related to the kidney.

neurologic

Pertaining to the nervous system and its disorders.

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neurologist

A physician who specializes in the diagnosis and treatment of diseases and conditions related to the brain and nervous system.

neuro-oncologist

A doctor who specializes in diagnosing and treating brain tumors and other tumors of the nervous system.

neuroradiology

The clinical subspecialty concerned with the diagnostic radiology of diseases of the central nervous system, head, and neck.

neurostimulators

Devices that are implanted into the spine and connected to internal or external generators to stimulate the nerves as a means of disrupting pain signals or causing organs to function more efficiently.

nodule

A small, solid lump.

noninvasive

A noninvasive procedure does not require any skin incision or the insertion of any

instruments or medical devices. Examples include CT and MR scanning and ultrasound.

nonradiologic

Not related to radiology.

nuclear medicine

The clinical discipline concerned with the diagnostic and therapeutic uses of radionuclides (an isotope of artificial or natural origin that exhibits radioactivity), excluding the therapeutic use of sealed radiation sources.

Certain imaging procedures, including PET scanning, employ radionuclides to provide real-time visuals of biochemical processes. One device, a nuclear imaging machine, employs a scintillation camera, which can rotate around the body to pick up radiation emitted by an injected substance (e.g., radioactive iodine, which localizes in the thyroid, or radioactive thallium, which localizes in the heart). Through computerization, a digitized image of a particular organ is produced.

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O**occluded**

Blocked.

oncologic

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Relating to oncology, the study of cancer and the branch of medicine devoted to the diagnosis and treatment of cancer.

oncologist

A specialist in oncology.

oncology

The study or science dealing with the physical, chemical, and biologic properties and features of neoplasms (abnormal tissue growth or cancer), including causation, pathogenesis, and treatment.

opaque

Impervious to light; not translucent or only slightly so.

optionally retrievable filters

A medical device that is temporarily implanted in and then removed from the inferior vena cava, the large vein that returns blood from the legs to the heart, to prevent blood clots in the lower body from traveling to the heart or lungs.

orbit

The bony cavity containing the eyeball.

orthopaedics

The medical specialty concerned with the preservation, restoration, and development of form and function of the musculoskeletal system, extremities, spine, and associated structures by medical, surgical, and physical methods.

orthopedic cement

An acrylic cement such as polymethylmethacrylate (PMMA) used to repair bone fractures and in other orthopedic surgeries.

osmosis

Movement of a solution through the membrane of a cell.

osteoarthritis

A common condition that usually starts in middle age and is characterized by degenerative changes in the bone and cartilage of one or more joints.

osteomyelitis

Inflammation of the bone marrow and adjacent bone.

osteopenia

Reduction in bone volume to below-normal levels; the first stage of bone loss; an early-warning sign pointing to an increased risk of developing full-blown osteoporosis.

osteoporosis

A condition of reduced bone mass with decreased cortical thickness and a decrease in the number and size of the spongy structures in the bone (but normal chemical composition), resulting in increased fracture incidence. Osteoporosis is classified as primary (Type 1, postmenopausal osteoporosis; Type 2, age-associated osteoporosis; and idiopathic, which can affect juveniles, premenopausal women, and middle-aged men) and secondary osteoporosis (which results from an identifiable cause of bone mass loss).

ovary

One of two female reproductive glands that contain the ova, or eggs, that are released during ovulation; the fallopian tubes connect the ovaries and the uterus.

ovulation

The release of an ovum, or egg, from the ovary, which then travels through the fallopian tube to the uterus to be fertilized by a sperm

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P**pacemaker**

An electrical device, often implanted, that maintains a normal heart rhythm by stimulating the heart muscle.

palliative treatment

Treatment designed to relieve or control symptoms rather than to cure disease.

palpable

1. Able to be felt; perceptible to touch
2. Evident; plain

pancreas

A gland located behind the stomach that secretes digestive (pancreatic) juice into the intestines. The gland also produces insulin and glucagon.

pancreatography

Radiographic demonstration of the pancreatic ducts, after injection of radiopaque material into the distal duct.

Pap test

Microscopic examination of cells exfoliated or scraped from a mucosal surface after staining with a special stain; used especially for detection of cancer of the uterine cervix.

papilloma

A non-cancerous tumor of the milk duct.

paranasal

Alongside the nose.
paranasal sinuses

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Hollow, air-filled spaces located within the bones of the face surrounding the nasal cavity. There are four pairs of cavities, called paranasal sinuses, each of which is connected to the nose by small openings.

parathyroid glands

Typically four small raisin-sized glands in the neck primarily involved in the regulation of calcium and phosphorus levels in the body.

parathyroid imaging

Evaluation of the parathyroid glands (typically four small raisin sized glands in the neck primarily involved in the regulation of calcium and phosphorus levels in the body) can be accomplished with a nuclear medicine technique using a material called Sestamibi or the parathyroid glands can be imaged with ultrasound, CT or MRI. See the home page of radiologyinfo.org and choose the type of imaging procedure you would like to learn about.

partial bowel resection

Removal of part of the colon.

partial colectomy

Removal of part of the colon.

particle beam radiation therapy

Particle or proton beam radiation therapy is a type of radiation therapy that uses protons as the source of radiation rather than x-rays. Protons can pass through healthy tissue without damaging it.

particulate agents

Synthetic materials that are suspended in liquid and injected into a blood vessel to form a permanent roadblock preventing blood flow. They are used in embolization procedures to stop bleeding or block arteries that provide blood flow to a tumor.

patency

The state of being freely open or exposed.

pathologic

Morbid or diseased; resulting from disease.

pathologist

A physician specializing in the examination of cells and tissues.

percutaneous

Denoting the passage of substances through unbroken skin, as in absorption of an ointment containing the active ingredient; also passage through the skin by needle puncture, including introduction of wires and catheters.

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perfusion
The flow of blood or other fluid per unit volume of tissue, as in ventilation/perfusion ratio.

pericardial effusion

Increased amounts of fluid within the sac surrounding the heart, usually due to inflammation.

perineum

The area between the thighs, extending from the rectal area to the pubic area.

peripheral vascular disease (PVD)

Arteriosclerosis in arteries of the arms or legs, which become narrow from the build up of plaque and eventually may cause severe symptoms. The most common form is disease in large vessels supplying the legs, which causes severe pain on walking and may in time make a patient immobile.

PVD is sometimes called peripheral artery disease (PAD).

peripherally inserted central catheter (PICC)

A special type of catheter used in a vascular access procedure that is inserted inside a major vein for a period of weeks, or months so that blood can be repeatedly drawn or medication and nutrients can be injected into the patient's bloodstream on regular basis. Unlike a standard intravenous catheter (IV) which is for short term use, a

vascular access catheter is more durable and does not easily become blocked or infected. The peripherally inserted central catheter (PICC) typically provides access for 4–8 weeks but may remain in place for up to six months.

peritoneal cavity

The space within the peritoneum.

peritoneum

A membranous sac consisting of a thin layer of irregular connective tissue that lines the abdominal cavity.

permanent brachytherapy

Also called seed implantation.

A radiation therapy treatment for cancer in which radioactive material sealed inside a seed or pellet is placed and permanently left inside the body in or near a tumor.

peroxide

Also known as hydrogen peroxide, a liquid bleaching agent used as a disinfectant.

phlebectomy

Excision of a segment of a vein, performed sometimes for the cure of varicose veins.

phlebitis

Painful inflammation of the veins.

photodynamic therapy

A form of treatment in which a drug is administered and then activated by light.

photon radiation therapy

Cobalt-60-based or photon radiation therapy machines are used exclusively to treat brain tumors and abnormalities.

physicist

A specialist in the science of physics.

pituitary gland

An endocrine gland located beneath the brain that supplies numerous hormones that govern many vital processes in the body.

plaque

A build-up of fat and other substances on the inner wall of a blood vessel. In time, plaque may build up and limit blood flow through the vessel.

platelets

Particles that are formed in bone marrow and circulate in the blood. They bind at the site of a wound to begin the clotting process.

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platinum coils

A type of coil, made of soft platinum wire smaller than a strand of hair and available in different diameters and lengths, used in a procedure called a detachable coil embolization to treat an aneurysm (a bulge) or a blood vessel malformation called a fistula (a false passageway) that occurs in the brain and other parts of the body. Using image guidance, the coils are placed at the site of a bulge or passageway, where it helps block the flow of blood or prevents a rupture of the vessel.

pleurisy

Inflammation of the membrane encasing the lungs.

pneumonia

Inflammation of the lung. Most cases are due to infection by bacteria or viruses, a few to inhalation of chemicals or trauma to the chest wall.

pneumothorax

A condition in which air escapes from the lungs into the space between the lung and the chest wall. With the loss of the negative pressure of the pleural space, the lungs cannot expand fully.

polymethylmethacrylate (PMMA)

An acrylic cement used to repair bone fractures and in other orthopedic surgeries.

polyp

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A mass that bulges outward from a normal tissue surface, usually appearing as an irregular mound-like structure growing from a broad base or a slender stalk.

porous

Having small holes or pores.

portal hypertension

Blockage of normal blood flow through the liver, usually the result of cirrhosis, which leads to back-pressure on the veins of the portal (intestinal) circulation and variceal bleeding and/or ascites.

portal vein

The main vein that drains blood from the digestive tract to the liver for filtration.

Port-o-cath

Manufacturer's name. A catheter connected to a quarter-sized disk that is surgically placed just below the skin in the chest or abdomen. The tube is inserted into a large vein or artery directly into the bloodstream. Fluids, drugs, or blood products can be infused or blood drawn through a needle that is stuck into the disk.

portography

Imaging of the portal circulation by x-rays, using contrast material, usually introduced into the spleen or into the portal vein at operation.

positron emission tomography (PET)

Positron emission tomography, also called PET or a PET scan, is a diagnostic examination that involves the development of biologic images based on the detection of subatomic particles. These particles are emitted from a radioactive substance given to the patient. The subsequent views of the human body are used to evaluate function.

post-embolization syndrome

A condition that includes pain, nausea, vomiting and low-grade fever that many patients experience following a chemoembolization procedure in which anticancer drugs are injected directly into a cancerous tumor and a synthetic material is placed inside the blood vessels that supply blood to the tumor to prevent blood from flowing to the area.

posteroanterior view

A term denoting the direction of view or progression, from posterior to anterior, through a part.

power Doppler

Power Doppler is a newer technique that is more sensitive at detecting blood flow than color Doppler. Power Doppler is able to obtain images that are difficult or impossible to obtain using standard color Doppler and to provide greater detail of blood flow, especially in vessels that are located inside organs.

Although power Doppler may be more sensitive than color Doppler for detection and demonstration of blood flow, power Doppler provides no information about the direction of flow. Color and spectral Doppler both reveal the direction of blood flow which can be valuable information.

precancerous

Abnormal tissue changes that often are found before cancer develops.

primary tumor

A tumor that originates at its location. See also tumor.

probe

1. A slender rod of flexible material, with blunt bulbous tip, used for exploring sinuses, fistulas, other cavities, or wounds.
2. A device or agent used to detect or explore a substance; e.g., a molecule used to detect the presence of a specific fragment of DNA or RNA or of a specific bacterial colony.
3. To enter and explore, as with a probe.

prophylactic cranial radiation

Exposure of the brain to low-dose radiation in a cancer patient in order to prevent the tumor from spreading to this site.

prostate cancer

Abnormal cells that grow into a mass of tissue called a tumor in the prostate gland.

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prostate gland

A walnut-size gland in men that surrounds the urethra and the neck of the bladder. The prostate, part of the male reproductive system, makes some of the milky fluid called semen that carries sperm.

prostatitis

An inflammation of the prostate gland.

proton

A positively charged particle that is a fundamental component of the nucleus of all atoms.

proton beam radiation therapy

Particle or proton beam radiation therapy is a type of radiation therapy that uses protons as the source of radiation rather than x-rays. Protons can pass through healthy tissue without damaging it.

pulmonary

Related to the lungs or the respiratory system, the complex of organs and structures that delivers fresh air throughout the body by exchanging oxygen and carbon dioxide between the atmosphere and blood circulating through the lungs.

pulmonary embolism

Obstruction or closing of pulmonary (relating to the lungs) arteries, most frequently by detached fragments of a blood clot from a leg or pelvic vein, commonly when the formation or presence of a clot has followed an operation or confinement to bed.

pulmonary hypertension

A condition of abnormally high blood pressure within the network of blood vessels between the heart and lungs that delivers oxygen to the blood and removes carbon dioxide.

pyelography

Radiologic study of the kidney, ureters, and usually the bladder, performed with the aid of a contrast material either injected intravenously, or directly through a ureteral or nephrostomy catheter or percutaneously.

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R**rad**

1. The unit for the dose absorbed from ionizing radiation, equivalent to 100 ergs per

gram of tissue; 100 rad = 1 Gy.

2. Symbol for radian.
3. Abbreviation for racemic.

radiation

1. The act or condition of diverging in all directions from a center.
2. The sending forth of light, short radio waves, ultraviolet or x-rays, or any other rays for treatment or diagnosis or for other purpose.
3. Radiant energy from waves or subatomic particles.

radiation dermatosis

Skin changes at the site of ionizing radiation, particularly redness of the skin due to capillary dilatation in the acute stage, temporary or permanent loss of hair, and chronic changes in the epidermis and dermis resembling a premalignant warty lesion.

radiation oncologist

Radiation oncologists are the doctors who oversee the care of each cancer patient undergoing radiation treatment. They develop and prescribe each cancer patient's treatment plan. They make sure that every treatment is accurately given. They monitor the patient's progress and adjust treatment to make sure patients get quality care throughout treatment. Radiation oncologists also help identify and treat any side effects of radiation therapy. They work closely with other physicians, and all members of the radiation oncology team. Radiation oncologists have completed four years of college, four years of medical school, one year of general medical training, then four years of residency (specialty) training in radiation oncology. They have extensive training in the safe use of radiation to treat disease. If they pass a special examination, they are certified by the American Board of Radiology. Patients should ask if their doctors board certified.

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radiation oncology

The medical specialty of radiation therapy; the study of radiation treatment of abnormal tissue growths (malignant or nonmalignant).

radiation oncology nurses

Nurses work with the radiation team to care for patients during the course of treatment. They help evaluate the patient before treatment begins. They may talk to the patient about potential side effects and their management. During the course of radiation treatments patients may be evaluated weekly, or more frequently by the nurse to assess problems and concerns. Nurses play a key role in educating the patient about treatment, side effects, etc. Radiation oncology nurses are registered nurses licensed to practice professional nursing. Most nurses in radiation therapy have additional accreditation in the specialty of oncology nursing. Advanced practice nurses in oncology, which include clinical nurse specialists and nurse practitioners, have completed a master's degree program.

radiation pneumonitis

Inflammation of lung tissue caused by exposure to radiation therapy.

radiation therapist

Radiation therapists work with radiation oncologists. They administer the daily radiation treatment under the doctor's prescription and supervision. They maintain daily records and regularly check the treatment machines to make sure they are

working properly. Radiation therapists go through a two-to-four year educational program following high school or college. They take a special examination and must be certified by the American Registry of Radiologic Technologists. In addition, many states require that radiation therapists be licensed.

radiation therapy

Treatment for non-malignant conditions and/or cancer through the use of x-rays or radionuclides.

Radiation Units

There are a number of units to measure radiation dose and exposure:

– rad or radiation absorbed dose

The amount of radiant energy absorbed in a certain amount of tissue.

– rem or roentgen-equivalent-man

A unit of measurement that takes into account different biological responses to different kinds of radiation. The radiation quantity measured by the rem is called equivalent dose.

– millirem

One thousandth of a rem, the unit for measuring equivalent dose.

– roentgen (R, r) (rent-gen, rent-chen)

The international unit of exposure dose for x-rays or gamma rays. Roentgens are named after Professor Wilhelm Konrad Roentgen, the man who discovered x-rays in 1895.

– sievert (Sv) (see-vert)

The unit for measuring ionizing radiation effective dose, which accounts for relative sensitivities of different tissues and organs exposed to radiation. The radiation quantity measured by the sievert is called effective dose.

– millisievert (mSv) (mill-see-vert)

One thousandth of a sievert, the unit for measuring effective dose.

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radioactive

Giving off radiation.

radioactive disintegration

The decrease in the amount of any radioactive material with the passage of time due to the spontaneous emission of radiation from an atomic nucleus.

radioactive iodine I-131

Also called radioiodine I-131.

A radioactive isotope created from iodine to emit radiation for medical use. See also radioactive iodine therapy.

radioactive iodine I-131 therapy

radioactive iodine I-131 therapy. The use of radioactive iodine I-131 to treat an overactive thyroid, a condition called hyperthyroidism. When a small amount of I-131 is swallowed, it is absorbed into the bloodstream in the gastrointestinal (GI) tract and concentrated from the blood by the thyroid gland, where it begins destroying the gland's cells.

radioactive material

Also called radioactive substance.

As used in the brachytherapy treatment of cancer, a radioactive material is sealed

inside a seed or pellet and placed inside the body, in or near a tumor. The radiation material used in brachytherapy comes from radioactive iodine 125, strontium 89, phosphorous, palladium, cesium, iridium, phosphate, or cobalt.

radiofrequency ablation

A treatment technique that uses high-frequency alternating electrical current to destroy tissue cells by heating them.

radiofrequency electrodes

An electrode is a fine wire through which electrical current may flow in or out when attached to a power source. A radiofrequency electrode carries high frequency electromagnetic waves that creates heat to ablate or destroy tissue (called radiofrequency ablation) or to seal blood vessels.

radiographic

Referring to the examination of any part of the body for diagnostic purposes by means of x-rays or other diagnostic modalities.

radiography

Examination of any part of the body for diagnostic purposes by means of x-rays with the record of the findings usually impressed upon a photographic film.

radioisotope

An isotope that changes to a more stable state by emitting radiation.

radioisotope bone scan **VIEWED 06/15/2012**

A nuclear imaging examination that produces pictures of bones to help detect abnormalities caused by disease or injury. During a bone scan, a small amount of radioactive material is injected into the body and collects in the bones.

radiologist

A physician trained in the diagnostic and/or therapeutic use of x-rays and radionuclides, radiation physics, and biology; a diagnostic radiologist may also be trained in diagnostic ultrasound and magnetic resonance imaging and applicable physics.

radiology

1. The science of high energy radiation and of the sources and the chemical, physical, and biologic effects of such radiation; the term usually refers to the diagnosis and treatment of disease.
2. The scientific discipline of medical imaging using ionizing radiation, radionuclides, nuclear magnetic resonance, and ultrasound.

radionuclide

An isotope of artificial or natural origin that exhibits radioactivity.

Radionuclides serve as agents in nuclear medicine and genetic engineering, play a role in computer imaging for diagnosis and experiment, and account for a percentage of background radiation to which humans are exposed. In cancer therapy, radionuclides are used to destroy tumors.

radiopaque

Impenetrable by x-rays or any other form of radiation.

radiopaque dye

Also referred to as contrast agent or contrast medium. Any internally administered substance that has a different opacity from soft tissue on radiography or computed tomography. Includes:

- Barium or water, used to make parts of the gastrointestinal tract opaque.
- Iodine in water, used for arthrography.
- Water soluble iodine, used to make blood vessels opaque; to demonstrate the inner structures of the urinary tract (kidneys, ureters and bladder); and to outline joints (the spaces between two bones).
- Iodine mixed with water or oil may be used to evaluate the fallopian tubes and lining of the uterus.
- Sterile saline (salt water) is used during hysterosonography.
- May refer to air occurring naturally or introduced into the body.
- Paramagnetic substances used in magnetic resonance imaging.

radiopharmaceutical

A drug that emits radioactivity. Also called a radiotracer.

radiosensitizers

Drugs that enhance the effect of radiation on cancer cells.

radiotherapists

One who practices radiotherapy or is versed in radiotherapeutics.

radiotherapy

The medical specialty concerned with the use of electromagnetic or particulate radiation in the treatment of disease.

radiotracer

A drug that emits radioactivity.

rectum

The lower part of the large intestine where feces are stored.

referring physician

Usually a family physician who sends a patient to a specialist for more information or treatment.

regional enteritis (Crohn's disease)

A moderately severe chronic inflammation of the intestine, especially of the small intestine, of unknown cause, involving the obstruction of the lower part of the small bowel and less frequently other parts of the gastrointestinal tract. It is characterized by patchy deep ulcers that may cause abnormal passages within the bowel, and narrowing and thickening of the bowel. Symptoms include fever, diarrhea, cramping abdominal pain, and weight loss.

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renal artery

The major artery supplying the kidney.

renal hypertension

When the renal arteries are narrowed by atherosclerosis, not enough blood reaches the kidney tissue and, as a result, substances are released that raise the blood pressure.

reproductive

Relating to the system of organs and parts used in reproduction consisting in the male especially of the testes, penis, seminal vesicles, prostate, and urethra and in the female especially of the ovaries, fallopian tubes, uterus, vagina, and vulva.

resection

Surgical removal of part or all of an organ or an area of diseased tissue.

respiratory

Related to the process of moving air into and out of the lungs, exchanging oxygen and carbon dioxide within the body's tissues. Also called pulmonary ventilation.

restenosis

The gradual re-closing of an artery after it has been widened through a procedure such as angioplasty.

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retinoblastoma
A tumor of the retina, occurring in children.

roentgen (R, r)

The international unit of exposure dose for x-rays or gamma rays; that quantity of radiation that will produce in 1 cm of air at STP, or 0.001293 g of air, 2.08×10^9 ions of both signs, each totaling 1 electrostatic unit (e.s.u.) of charge; in the MKS system this is 2.58×10^{-4} coulombs per kg of air.

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S**sarcoma**

A malignant or cancerous tumor that occurs in the connective tissues of the body, including the bones, cartilage, tendons and soft tissues.

scan

1. To survey by traversing with an active or passive sensing device.
2. The image, record, or data obtained by scanning, usually identified by the technology or device employed; e.g., CT scan, radionuclide scan, ultrasound scan, etc.
3. Abbreviated form of scintiscan (scintigraphy), usually identified by the organ or structure examined; e.g., brain scan, bone scan, etc.

sciatica

Painful inflammation of the sciatic nerve that sometimes results from a herniated intervertebral disc in the spine.

scintigraphy

A diagnostic procedure consisting of the administration of a radionuclide with an affinity for the organ or tissue of interest, followed by recording the distribution of the radioactivity with a stationary or scanning external scintillation camera.

sclerosing

Liquid chemicals or alcohols used to destroy blood vessels in an embolization procedure. Sclerosing damages the inner lining of a vessel and causes blood clots (a thickened mass of blood) to form, thus preventing blood flow through the vessel.

sclerotherapy

Treatment involving the injection of a sclerosing (hardening) solution into vessels or tissues.

scoliosis

A lateral curvature of the spine that usually develops in childhood or adolescence.

screening mammography

Imaging examination of the breast by means of x-rays, of individuals usually without symptoms to detect those with a high probability of having breast disease.

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scrotum

A muscular sac that contains the testes.

sedative

A drug that allows you to relax during a procedure like angiography, often without putting you to sleep.

seed implantation

A radiation therapy treatment for cancer in which radioactive material sealed inside a seed or pellet is placed and permanently left inside the body in or near a tumor.

semen

A thick white fluid, made and stored in male testicles, that carries sperm out of the body through the penis during ejaculation.

sentinel lymph node

The first lymph node in a lymph node bed to receive drainage from a tumor site.

sheath

A short, hollow plastic tube inserted through the skin into a blood vessel or tissue through which other instruments, such as a guide wire and balloon-tipped catheter are advanced.

short-bore MRI system

A type of magnetic resonance imaging (MRI) unit. The traditional MRI unit is a large cylinder-shaped tube surrounded by a circular magnet. The patient lies on a moveable examination table that slides in the center of the magnet. The short-bore system is designed so that the body part that is being scanned remains in the magnet. The short-bore nature of the magnet allows the body part not being scanned to potentially be "outside" of the magnet. Patients often report the short-bore MRI system is less claustrophobic than a traditional MRI unit.

sickle-cell anemia

A severe, chronic type of anemia caused by an abnormal form of hemoglobin that distorts the red blood cells.

simulation

Use of a radiographic system or computer to plan radiation therapy. See also treatment planning.

sinus

Hollow, air-filled spaces located within the bones of the face surrounding the nasal cavity. There are four pairs of cavities, called paranasal sinuses, each of which is connected to the nose by small openings.

sinusitis

Infection or inflammation of one or more of the sinuses.

sloughing

The process in which dead tissue becomes separated from living anatomic structures.

social workers

Social workers may be available to provide practical help and counseling to patients or members of their families. They can help a patient and family members cope. They also may help arrange for home health care and other services. Social workers may be licensed. Licensed social workers must have a master's degree. They also must pass an examination.

sonographer

An allied health professional who has been specifically trained to perform ultrasound examinations. Many sonographers are certified by a registry of sonographers, provided they meet strict training requirements and pass examinations in basic ultrasound science and clinical applications.

sonography

The location, measurement, or delineation of deep structures by measuring the reflection or transmission of high frequency or ultrasonic waves. Computer calculation of the distance to the sound reflecting or absorbing surface plus the known orientation of the sound beam gives a two- or three-dimensional image. Syn: ultrasonography.

spectral Doppler

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Instead of displaying Doppler measurements visually as in the color and power Doppler methods, spectral Doppler displays the blood flow measurements graphically, in terms of the distance traveled per unit of time.

speculum

An instrument for enlarging the opening of any canal or cavity in order to facilitate inspection of its interior.

sperm

Sperm (or spermatozoa) is the male reproductive cell carried by semen through the penis when a man ejaculates.

spinal canal

The cavity within the vertebral column through which the spinal cord passes.

spinal cord

A cylindrical bundle of nerves, lying within the vertebral column, that carries sensory messages from peripheral nerves to the brain, and motor impulses from the brain to the body's muscles.

spinal fusion

Surgical fixation of an unstable segment of the spine.

spleen

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A large vascular lymphatic organ lying in the upper part of the abdominal cavity on the left side, between the stomach and diaphragm. It is a blood-forming organ in early life and later a storage organ for red corpuscles and platelets; because of the large number of macrophages, it also acts as a blood filter.

splenoportography

Introduction of radiopaque material into the spleen to obtain an x-ray visualization of the portal vessel of the portal circulation.

spot films

X-rays of a localized region, usually under study by fluoroscopy.

stage

Extent or progression of a disease such as cancer.

staging

Determining the extent or progression of a disease such as cancer.

stenosis, pl. stenoses

1. A stricture of any canal; especially, a narrowing of one of the cardiac valves.
2. Narrowing of an opening or passageway in the body. Stenosis of an artery may reduce blood flow through the vessel.

stent

1. Device used to maintain a bodily orifice or cavity during skin grafting, or to immobilize a skin graft after placement.
2. Slender thread, rod, or catheter, lying within the space in the interior of a tubular structure, such as an artery or the intestine. Used to provide support during or after opening surgically, or to assure the opening of an intact but contracted lumen.
3. A semi-rigid tube-like device used to keep an artery open after angioplasty.

stenting

The act of placing a stent.

stereotactic biopsy

An x-ray procedure that uses multiple coordinates to precisely determine the location of a tumor or nodule so that a tissue sample may be obtained.

stereotactic radiosurgery

A highly precise form of radiation therapy that directs narrow beams of radiation from different angles at a brain tumor or abnormality. Using a device that keeps the head completely still, this treatment minimizes the amount of radiation to healthy brain tissue. Also see stereotactic radiotherapy.

stereotactic radiotherapy

A form of stereotactic radiosurgery using fractionated radiation dose (smaller dose over a period of days or weeks) or hyperfractionated dose (smaller dose two to three times a day), as opposed to a single large dose, to minimize tissue damage. Also see stereotactic radiosurgery.

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sternum

The long, flat bone that forms the front of the chest cage.

stress test

A heart monitoring test to discover how well the heart works, usually performed via physical exercise, sometimes via pharmaceuticals.

stroke

The sudden development of localized disturbances in the nervous system, usually related to reduced blood in the brain.

subarachnoid space

The space between the membrane covering the spinal cord and the cord itself.

subclavian vein

A major vein running through the shoulder region which receives blood from the large vein of the upper arm and returns it part of the way to the heart.

subcutaneous port

A special device used in a vascular access procedure that is inserted inside a major vein for a period of months or years so that blood can be repeatedly drawn or medication and nutrients can be injected into the patient's bloodstream on regular

basis. The subcutaneous implantable port is a permanent device that consists of a catheter, a long, thin, hollow plastic tube, attached to a small reservoir, both of which are placed under the skin.

superior vena cava

One of the largest veins in the body, it returns blood from the entire upper half of the body directly to the right atrium, one of the heart chambers.

surgical shunt

A surgically created passageway to allow blood or other bodily fluids to flow between two locations. A shunt may be used to move fluid from one part of the body to another or to divert blood flow from one route to another.

sutures

Stitches used to hold tissue together or to close a wound.

synchrotron

A cyclic particle accelerator in which the magnetic field (to turn the particles so they circulate) and the electric field (to accelerate the particles) are synchronized with the traveling particle beam. While the cyclotron uses a constant magnetic field and a constant frequency electric field, both are varied in the synchrotron. This allows for construction of large rings that can accelerate particles to much higher energies than a cyclotron which has a limited magnet size. The synchrotron uses multiple separate bending magnets and narrow bore tubes to connect them. It can be used to produce high energy protons and other particles such as carbon ions that are used to treat cancer. In addition, the energy of the particles can be varied as needed which is very difficult in a cyclotron.

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T**targeted cryoablation therapy**

A minimally invasive treatment that uses extreme cold in the form of liquid nitrogen or argon gas to freeze and destroy diseased tissue, including cancer cells.

technetium-99m

A radiotracer commonly used in nuclear medicine for many different types of examination. It decays within 24 hours, leaving no residual radiation.

technologist

One trained in and using the techniques of a profession, art, or science.

temporary brachytherapy

A radiation therapy treatment for cancer in which radioactive material sealed inside a seed or pellet is placed inside the body in or near a tumor for a specified amount of time and then withdrawn. This treatment can be administered at a low dose rate (LDR) or high dose rate (HDR).

testicular torsion

The twisting of the spermatic cord that contains the vessels that supply blood to the scrotum.

testis

One of the two male reproductive glands that produce spermatozoa (sperm) and male hormones (testosterone). The testes are located behind the penis in the scrotum.

therapeutic radiology

A medical specialty and the study of radiation treatment of abnormal tissue (nonmalignant or cancerous) through the use of x-rays or radionuclides.

therapist

One professionally trained and/or skilled in the practice of a particular type of therapy.

thoracic

Refers to the chest or ribs region of the spinal column, which includes twelve bones, or vertebrae labeled T-1 through T-12.

thrombolytic agent

One of a group of medications used to dissolve clots within the blood vessels of the body.

thrombophlebitis

Inflammation of a vein that results when a blood clot, a thickened mass of blood, forms along the wall of a blood vessel.

thrombosis

A blood clot or thrombus that forms in a blood vessel or organ of the body, potentially blocking the flow of blood.

thyroid gland

One of nine endocrine glands in the body, located in front of the neck just below the Adam's apple. It is shaped like a butterfly, with two lobes on either side of the neck connected by a narrow band of tissue. The thyroid gland produces thyroid hormones that set the rate the body carries on its necessary functions (metabolic rate). Some of the functions controlled by thyroid hormones include heart rate, cholesterol level, body weight, energy level, muscle strength, skin condition and vision.

thyroid scan

A nuclear medicine examination that helps evaluate the structure of the thyroid. The thyroid is a gland in the neck that controls metabolism, a chemical process that regulates the rate at which the body functions.

thyroid uptake

Also known as radioactive iodine uptake test (RAIU).

A nuclear medicine examination that helps evaluate the function of the thyroid. The thyroid is a gland in the neck that controls metabolism, a chemical process that regulates the rate at which the body functions.

tomography

Making a radiographic image of a selected plane by means of reciprocal linear or curved motion of the x-ray tube and film cassette; images of all other planes are blurred ("out of focus") by being relatively displaced on the film.

transabdominal

Through or across the abdomen.

transducer

A hand-held device that sends and receives ultrasound signals.

transjugular intrahepatic portosystemic shunt (TIPS)

A small, tubular metal device commonly called a stent or stent-graft that is placed in the middle of the liver to connect the hepatic vein and portal vein, creating a shunt between the systemic and portal venous system. The shunt is placed in an attempt to decrease portal pressure and sometimes used to treat recurrent ascites.

transplant

1. To transfer from one part to another, as in grafting and transplantation.
2. The tissue or organ in grafting and transplantation.

transrectal

Passing through or performed by way of the rectum.

transvaginal

Across or through the vagina (the genital canal in the female, extending from the uterus to the vulva).

treatment planning

Establishment of procedures to carry out effective radiation therapy with minimal risk to healthy tissue.

trocar

A hollow needle with a sharply pointed end that is inserted into a blood vessel, body cavity or bone. Needles, tubes or other instruments are then inserted through the trocar to reach the treatment area.

tumor

A growth of abnormal cells that are either malignant or benign.

tumor ablation

The removal of a tumor.

tunneled catheter

A special type of catheter used in a vascular access procedure that is inserted inside a major vein for a period of weeks, or months so that blood can be repeatedly drawn or

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medication and nutrients can be injected into the patient's bloodstream on regular basis. Unlike a standard intravenous catheter (IV) which is for short term use, a vascular access catheter is more durable and does not easily become blocked or infected. The tunneled catheter, which has a cuff at one end that stimulates tissue growth to help hold it in place, is used when access to the vein is needed for longer than three months and many times each day. This catheter is commonly used for patients requiring dialysis.

turgidity

Veins that carry blood from throughout the body to the heart rely on a series of valves that work like gates to prevent blood from flowing backwards. When valves are not working properly, the normal flow of blood slows and creates pockets of backflow, called turgidity, where clots can develop.

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U

ulcerative colitis

A chronic disease of unknown cause characterized by ulceration of the colon and rectum, with rectal bleeding, abdominal pain, and diarrhea; frequently causes anemia and electrolyte imbalance, and is less frequently complicated by peritonitis inflammation of the abdominal membrane, toxic megacolon (a condition of extreme dilation and hypertrophy of the colon), or cancer of the colon.

ulcers (of the skin)

An open sore or irritation on the skin.

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ultrasonography

The location, measurement, or delineation of deep structures by measuring the reflection or transmission of high frequency or ultrasonic waves. Computer calculation of the distance to the sound-reflecting or absorbing surface plus the known orientation of the sound beam gives a two- or three-dimensional image.

ultrasound, diagnostic

Ultrasound imaging, also known as ultrasound scanning or sonography, is a method of obtaining images from inside the human body through the use of high frequency sound waves. The soundwaves' echoes are recorded and displayed as a real-time, visual image. No ionizing radiation is involved in ultrasound imaging.

ultraviolet

Denoting electromagnetic rays at higher frequency than the violet end of the visible spectrum.

undescended testicle

A testicle that hasn't descended from the body.

uranium (U)

A radioactive metallic element, atomic no. 92, atomic wt. 238.0289, occurring mainly in pitchblende and notable for its two isotopes: 238U and 235U (99.2745% and

0.720%, respectively, the rest being made up by ²³⁴U, ²³⁵U being the first substance ever shown capable of supporting a self-sustaining chain reaction.

ureter

The tube that carries urine from each kidney to empty into the bladder.

urethra

A tube that carries urine from the bladder out of the body. In men, the urethra carries semen from the prostate and other sex glands out of the body through the penis.

urethrocystometry

A procedure that simultaneously measures pressures in urinary bladder and urethra.

uric acid

A waste product left over from normal chemical processes in the body and found in the urine and blood.

urinary

Relating to the organs involved in producing and passing urine.

urography

Radiography of any part (kidneys, ureters, or bladder) of the urinary tract.

urologist

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A specialist in the diagnosis and treatment of genitourinary tract diseases.

uterine

Relating to the uterus.

uterine cavity

The space within the uterus.

uterine fibroid embolization

A minimally invasive treatment for fibroid tumors of the uterus, in which a synthetic material called an embolic agent is placed inside one or more of the blood vessels that supply the tumors with blood. As the vessels close off, the fibroid tissue shrinks.

uterus

The hollow muscular organ in which the impregnated ovum (egg) is developed into the child; it is about 7.5 cm in length in the nonpregnant woman, and consists of a main portion (body) with an elongated lower part (neck), at the extremity of which is the opening (os). The upper rounded portion of the uterus, opposite the os, is the fundus, at each extremity of which is the horn marking the part where the uterine tube joins the uterus and through which the ovum reaches the uterine cavity after leaving the ovary. The organ is supported in the pelvic cavity by the broad ligaments, round ligaments, cardinal ligaments, and rectouterine (relating to rectum and uterus) and vesicouterine (relating to bladder and uterus) folds or ligaments.

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V**vacuum-assisted biopsy**

A type of biopsy in which a vacuum-powered instrument is inserted through the skin to the site of an abnormal growth to collect and remove a sample of cells for analysis. Using vacuum pressure, the abnormal cells and tissue are removed without having to withdraw the probe after each sampling as in core needle biopsy.

vagina

The genital canal in the female, extending from the uterus to the vulva.

variceal bleeding

Bleeding from any of the veins that normally drain the stomach, esophagus, or intestines into the liver.

varices

Dilated, fragile veins that are prone to bleeding because of the high pressure caused by portal hypertension. Varices typically arise at the junction of the esophagus and stomach, but can arise anywhere along the gastrointestinal tract.

Varicocele

An abnormal enlargement of a vein in the scrotum draining the testicles.

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varicose

Abnormally swollen and enlarged.

varicose veins

When veins, typically in the legs, become less elastic and the one-way valves that normally prevent blood from flowing backward malfunction, blood pools in the vessels resulting in varicose or enlarged and knotty veins.

vascular

Relating to or containing blood vessels.

vascular disease

Any condition that affects the circulatory system, the system of blood vessels that transports blood throughout the body.

vascular stenting

Often performed with angioplasty, a procedure in which a small wire mesh tube called a stent is permanently placed in a newly opened artery to help it stay open.

vasography

Radiography of the the secretory duct of the testicle (vas deferens), to determine patency (the state of being freely open), by injecting contrast medium into its opening either through the urethra or by incision into the vas deferens.

vein

One of a large system of branching vessels that collect blood which the arteries have distributed to body tissues and returns it to the heart and then the lungs.

vein stripping

A procedure in which varicose veins, abnormally swollen and enlarged blood vessels, are removed surgically, usually from the leg.

venogram

X-ray imaging of the veins following contrast material injection into the veins.

venography

A type of x-ray in which contrast material is injected into a vein to show the details of its structure and any abnormality that may be present.

venous insufficiency

Enlarged veins that cause circulatory problems.

ventilation

1. Replacement of air or other gas in a space by fresh air or gas.
2. Movement of gas(es) into and out of the lungs.

vertebra

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One of the bones that extend from the upper neck to the pelvic level and serve to enclose and protect the spinal cord.

vertebrae

The bony segments of the spinal column which contain and protect the spinal cord.

vertebral compression fractures

Fractures of the vertebrae caused by the compression, or excessive pushing, of one bone against another.

vertebroplasty

Vertebroplasty is an image-guided, minimally invasive, nonsurgical therapy used to strengthen a broken vertebra (spinal bone) that has been weakened by osteoporosis or, less commonly, cancer.

vesicoureteral

The passage of urine from the bladder back into a ureter.

viscera

An organ of the digestive, respiratory, urogenital, and endocrine systems, as well as the spleen, the heart, and great vessels; hollow and multilayered walled organs.

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W**white blood cells**

Cells that circulate in the blood and are responsible for both directly and indirectly attacking foreign invaders of the body.

wire localization

Guided by an imaging modality such as magnetic resonance imaging, a wire is inserted through a hollow needle to a lesion, or suspicious area of cells and tissue. The wire then guides the surgeon to the area so that the abnormal tissue can be surgically removed for examination.

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X**x-ray**

1. The ionizing electromagnetic radiation emitted from a highly evacuated tube, resulting from the excitation of the inner orbital electrons by the bombardment of the target anode with a stream of electrons from a heated cathode.
2. Ionizing electromagnetic radiation produced by the excitation of the inner orbital electrons of an atom by other processes, such as nuclear decay and its sequelae.
3. A radiograph.

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A medical specialty and the study of radiation treatment of abnormal tissue (nonmalignant or cancerous) through the use of x-rays or radionuclides.

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Z