Key Medical Terms Associated with Medical Diagnostic Tests

Symptom: A patient's perception of a change in normal body function. Examples of symptoms include nausea, fatigue, and pain.

Palpation: Clinician's use of the hands and fingers to feel the patient's body. The procedure provides information about skin texture and temperature, the presence and texture of abnormal tissue masses, the pattern of the pulse, and the location of tender spots.

Percussion: Tapping with the fingers or hand to obtain information about the densities of underlying tissues. For example, when tapped, the chest normally produces a hollow sound, because the lungs are filled with air. That sound changes in pneumonia, when the lungs contain large amounts of fluid.

Auscultation: Listening to body sounds, typically with a stethoscope. Technique is particularly useful for checking the condition of the lungs during breathing. The wheezing sound heard in people with asthma is caused by a constriction of the airways, and pneumonia produces a gurgling sound, indicating that fluid has accumulated in the lungs. Also important in diagnosing heart problems.

Endoscopy: Insertion of fiber-optic tubing into a body opening or through a small incision (laparscopy, athroscopy); permits visualization of a body cavity or the interior of an organ; allows direct visualization and biopsy of structures and detection of abnormalities of surrounding soft tissue

Examples:

Bronchoscopy: bronchi and lungs

Laparoscopy: abdominopelvic organs

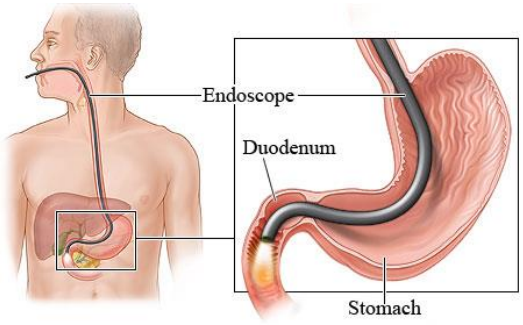
Cystoscopy: urinary bladder

Esophagoscopy: esophagus

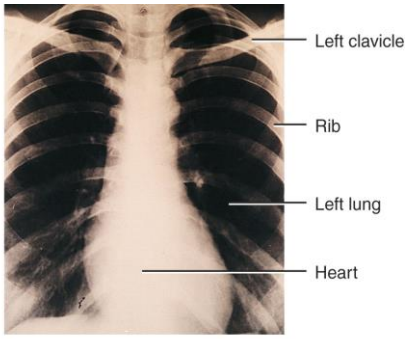
Gastroscopy: stomach

Colonoscopy: colon

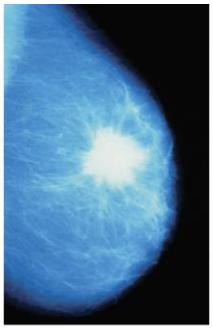
Arthroscopy: joint cavity



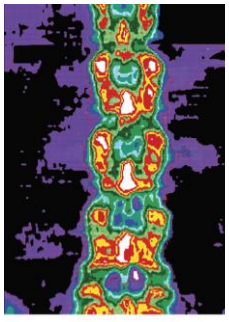
Standard X rays: A beam of X rays pass through the body and then strikes a photographic plate: radiodense tissues block X ray penetration, leaving unexposed (white) areas on the film negative. **Mammogram** consists of X rays of each breast taken at different angles for early detection of breast cancer and other masses such as cysts. At low doses, x-rays can be used to examine soft tissue such as the breast (mammography) and for determining bone density (bone densitometry).



Radiograph of the thorax in anterior view



Mammogram of a female brea showing a cancerous tumor (white mass with uneven bord

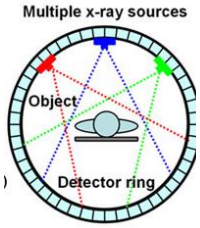


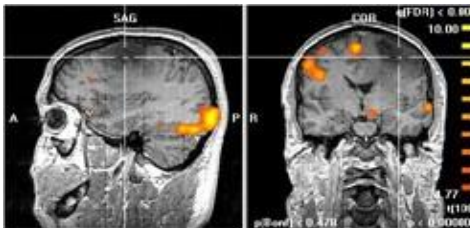
Bone densiometry scan of the lumbar spine in anterior view

Contrast X rays: X rays taken after infusion or ingestion of radiodense solutions. **Barium swallow** (upper GI) is a series of X rays after the ingestion of barium, to detect abnormalities of esophagus, stomach, and duodenum. **Barium enema**: series of X rays after barium enema, to detect abnormalities of colon. **IV pyelography**: series of X rays after intravenous injection of radiopaque dye filtered by kidneys; reveals abnormalities of kidneys, ureters, and urinary bladder; allows assessment of renal function.

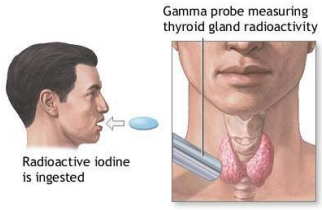
Barium contrast x-ray showing a cancer of the ascending colon (arrow)

Computerized tomography (CT or CAT scan): X-rays are used to trace an arc at multiple angles around a section of the body. Produces multiple cross-sectional images that when viewed together can produce a three-dimensional image for detailed examination.

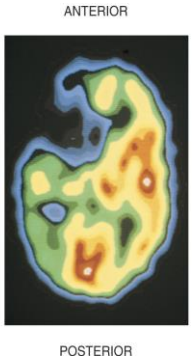




Radioactive iodine uptake test (RAI): Radioactive labeled iodine compound is given orally; thyroid scans are taken to determine percentage uptake of radioiodine by thyroid gland. Aids in the determination of hyperthyroidism and hypothyroidism and in detection of thyroid nodules.



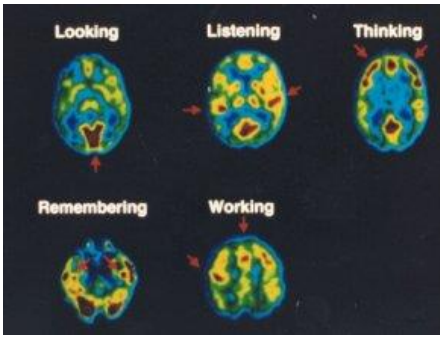
Positron emission tomography (PET): Radioisotopes are given by injection or inhalation; gamma detectors absorb energy and transmit information to computers to generate cross-sectional images. Provides information on **structure and function** (metabolism of brain, heart, etc). Primarily used as a research tool; rapid functional MRI more widely used in clinical settings.



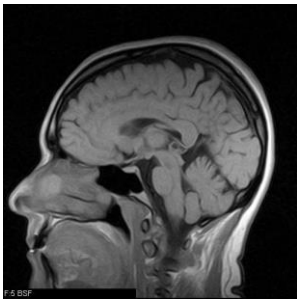
Positron emission tomography scan of a transverse section of the brain (darkened area at upper left indicates where a stroke has occurred)

Black and blue colors indicate minimal activity

Red, orange, yellow, and white colors indicate areas of greater activity.

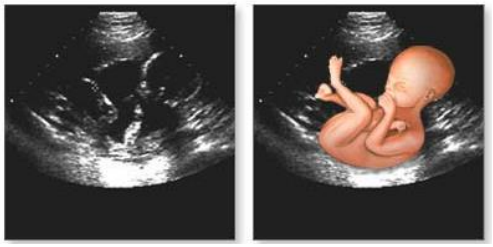


Magnetic resonance imaging (MRI): A magnetic field is produced to align hydrogen protons and is then exposed to radio waves that cause the aligned atoms to absorb energy. The energy is then emitted and captured to produce an image. Gives excellent contrast of normal and abnormal tissue; reveals extent of tumors, brain and spinal cord abnormalities, obstructions or aneurysms in arteries, and abnormalities of ligaments and cartilages at joints.



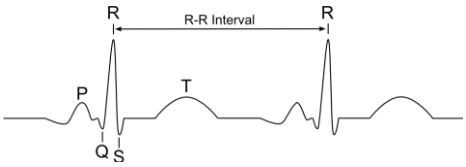
Ultrasound: High-frequency sound waves reflect off body tissues and are detected by the same instrument. An echogram (picture) is assembled from the pattern of echoes. Image which may be still or moving is called a **sonogram** – visualized on a video monitor. Procedure is safe, noninvasive, painless, and uses no dyes.

Ultrasound of fetus during week 17 of pregnancy

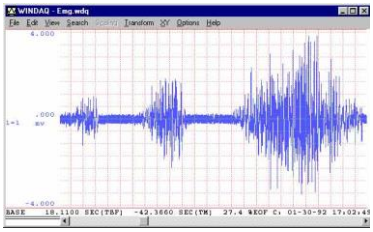


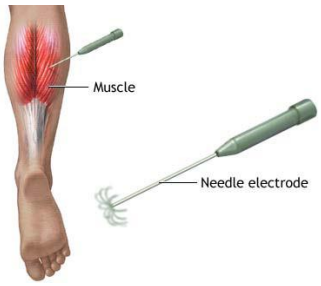
Echocardiography: Ultrasounds of the heart. Used to assess the structure and function of the heart valves.

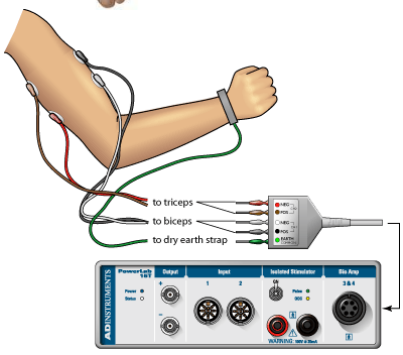
Electrocardiography (ECG or EKG): Graphed record of the electrical activity of the heart, using electrodes on the skin surface. Used in the detection of arrhythmias, such as premature ventricular contractions (PVC) and fibrillation, and to assess damage after a heart attack.



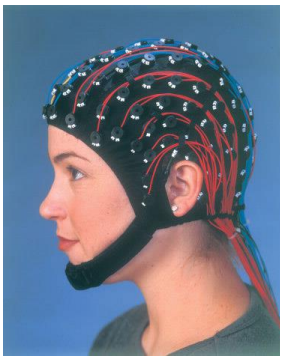
Electromyography (EMG): Graphed record of electrical activity resulting from skeletal muscle contraction, using electrodes inserted into the muscles or on the skin surface. Used in the determination of neural or muscular origin of muscle disorders; aids in the diagnosis of muscular dystrophy, pressure on spinal nerves, and peripheral neuropathies.

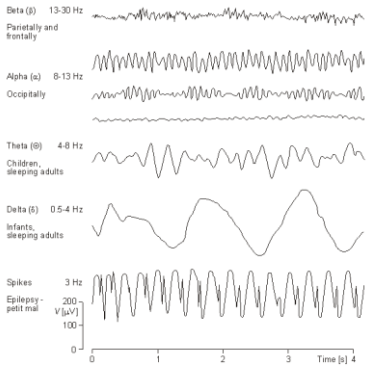






Electroencephalography (EEG): Graphed record of electrical activity in the brain through the use of electrodes on the surface of the scalp. Used in the analysis of brain wave frequency and amplitude aids in the diagnosis of tumors and seizure disorders.





Biopsy: A biopsy is the removal of a small amount of tissue for examination under a microscope to determine the presence or extent of a disease. It may also be tested with chemical reagents to help identify abnormal chemicals in the tissue. For most types of cancer, a biopsy is the main way to diagnose cancer. Other tests can suggest that cancer is present, but only a biopsy can make a definite diagnosis.