Radiography, or X-ray, is the oldest and most frequently used form of medical imaging. These images can be viewed by hospital physicians via computer, eliminating the need for film. X-ray imaging is fast and provides a rapid method of evaluating the entire body — especially the bones and chest cavity. With the exception of upper/lower GI series tests, there is no appointment necessary.

Common Diagnostic Procedures

Chest X-ray — Performed to evaluate the lungs, heart or chest wall to diagnose pneumonia, heart failure, emphysema, lung cancer and other medical conditions.

Upper GI Series — An upper gastrointestinal (GI) series is an X-ray or fluoroscopic examination of the esophagus, stomach and the duodenum. Patients are usually asked to swallow a solution of baking soda crystals and barium contrast liquid.

Barium Enema — An exam to evaluate the colon and rectum during which patients are given an enema of liquid barium contrast solution. This coats the inside of the colon and rectum, producing a sharp, well-defined image.

Both GI examinations are useful for diagnosing ulcers, polyps, cancer or signs of other illnesses, such as Crohn’s disease and ulcerative colitis.

DEXA — Is the most commonly used test for measuring bone mineral density. It is the most accurate way to diagnose Osteopenia or Osteoporosis.

Bone X-rays — Used to evaluate fractures, dislocations or other conditions.

Hysterosalpingiograms (HSG) — Images of the uterus and fallopian tubes are taken by injecting contrast via catheter inserted into the uterus. The procedure is performed by the Newark Beth Israel’s Radiologist.

Ultrasound

Common Diagnostic Procedures

Abdominal Ultrasound — Examination of the liver, gallbladder, bile duct and spleen.

Renal Ultrasound — Examination of the kidney.

Gynecologic Ultrasound — Examination of the uterus and/or ovaries.

Obstetric Ultrasound — 1st trimester examination for fetal size and due date.

Ultrasound of Small Parts — Examination of the thyroid, parathyroid, parotid, scrotum and any soft tissue.

Ultrasound-guided Hysterosonogram — Examination of uterine and ovarian abnormalities.

Diagnostic Radiology

X-RAY: Monday-Friday 7:30 am - 5:30 pm Saturday 8 am - 12 pm
Small Bowel, Upper GI: Monday-Friday 8:30 am - 12 pm, 1-3:30 pm
Hysterosalpingiogram: Monday-Friday 1:30 pm - 3:30 pm
VCUG: Monday-Friday 8:30 am - 12 pm

CT
Monday-Friday 8:30 am - 4:15 pm, Saturday 8 am - 12 pm

MRI
Monday-Tuesday 8 am - 7:30 pm, Wednesday 12 pm - 7:30 pm, Thursday 10 am - 7:30 pm, Friday 12 pm - 7:30 pm, Saturday –Sunday 8 am - 12 pm

Mammography
Monday-Friday 7:15 am - 6:30 pm, Saturday 8:15 am - 7:30 pm, Sunday 9-12 pm

Interventional Radiology
Monday-Friday 8:00 am - 5:30 pm

Ultrasound
Monday-Friday 8:15 am - 5:30 pm, Saturday 9 am - 11 am

Nuclear Medicine
Monday-Friday 8 am - 3 pm, Saturday 8 am - 4 pm
Mammography

Mammogram Screening – The procedure involves x-raying each breast, one from the side of the breast, and one from the top. The breast is compressed during the x-ray, improving the image by bringing the breast structure closer to the film.

Mammogram Diagnostic – An x-ray exam of the breasts that is performed in order to evaluate a breast complaint or abnormality detected by physical exam or routine screening mammogram. Diagnostic mammography is different from screening mammography in that additional views of the breast are usually taken, as opposed to two views typically taken with screening mammography.

Stereotactic Breast Biopsy – It is a way of obtaining a sample of tissue from a questionable area that has been seen by mammography or ultrasound imaging using a special type of needle rather than surgery. Imaging by either x-ray or ultrasound will determine the exact location of area to be sampled. Your breast will be numbed prior to procedure and a needle will be placed onto the area of interest. Samples will be taken and sent to the lab for analysis. Sometimes a small clip will be placed into the breast to mark the area biopsied.

Magnetic Resonance Imaging (MRI)

Newark Beth Israel’s 1.5 Philips MRI system produces clear, detailed images, to diagnose conditions at their earliest, most treatable stages. Images are interpreted by radiologists who specialize in MRI diagnosis.

Common Diagnostic Procedures

Magnetic Resonance Angiography (MRA) – A non-invasive test used to evaluate a majority of the blood vessels in the body. It can identify aneurysms, blockages and peripheral vascular disease. Images are obtained without a catheter, so there is no risk of damaging an artery.

MRI Body Imaging – Produces high-detail images of the organs of the abdomen and pelvis.

MRI Neuro Imaging – Produces high-detail images of the brain, spine and upper extremities.

MRI Musculoskeletal Imaging – Produces high-detail images of major joints and soft tissues of the upper and lower extremities.

Breast MRI – allows for the visualization of minute abnormalities that can sometimes be missed by other imaging techniques. Breast MRI is an invaluable tool in the assessment and diagnosis of breast cancer.

Nuclear Medicine

The Nuclear Medicine Department offers state-of-the-art imaging for a wide range of nuclear medicine studies.

Common Nuclear Procedures

Bone Scan – A small amount of radionuclide is injected intravenously to evaluate abnormalities in bones.

Hida Scan – A small amount of radionuclide is used to evaluate blockages of the biliary system. With the addition of ejection fraction, gallbladder function is visualized as well.

Lymphoscintigraphy – Used to pinpoint the location of the sentinel node. It aids in the surgical removal of the node in patients with breast carcinoma or melanoma.

GI Bleed – Non-invasive procedure that uses a small amount of radionuclide to localize the bleeding site in the gastrointestinal tract.

Thyroid Scan and Uptake – A pill containing a small amount of radionuclide enables the radiologist to evaluate the structure and function of the thyroid gland.

Positron Emission Tomography

Computerized Tomography

PET/CT imaging combines two state-of-the-art scanner technologies into one exam. Small lesions or tumors can be detected with PET, then located with CT.

It requires a small amount of radioactive glucose to detect cancers of the breast, esophagus, cervix, lung, colon, rectum, head, neck, ovaries and thyroid, as well as melanoma and lymphoma.

Breast MRI – allows for the visualization of minute abnormalities that can sometimes be missed by other imaging techniques. Breast MRI is an invaluable tool in the assessment and diagnosis of breast cancer.
**Computerized Tomography (CT) Scan**

The CT Department features a 16 and 64 slice Philips CT scanners, and a GE 64 slice CT scanner which encompasses a technology that significantly reduces the radiation dose for each procedure performed. Each CT captures detailed images in seconds, allowing radiologists to reconstruct images of bone, body, brain and vascular system in 3-D. This enables physicians to diagnose conditions at their earliest stages.

**Common CT Procedures**

**CT Body Imaging** – CT imaging of the chest, abdomen and pelvis is the most common radiologic test performed to diagnose and evaluate a variety of conditions.

**CT Neuro Imaging** – focuses on the diagnosis and characterization of abnormalities of nervous system, brain, spine, skull base, ENT and orbits.

**Interventional Radiology**

Most procedures can be performed on an outpatient basis or require only a short hospital stay. General anesthesia usually is not required, and risk, pain and recovery time often are significantly reduced.

**Common Interventional Procedures**

**Angiography** – An X-ray exam of the arteries and veins to diagnose blockages and other blood vessel problems. During the procedure, a catheter is inserted into the blood vessel and contrast is used to make the artery or vein visible on an X-ray.

**Balloon Angioplasty** – Opens blocked or narrowed blood vessels, such as inpatients with peripheral vascular disease (PVD). During the procedure, a very small balloon is inserted into the vessel and inflated.

**Biliary Drainage and Stenting** – A stent is used to open up blocked ducts and allow bile to drain from the liver and gallbladder.

**Percutaneous Cholecystostomy** – Used to drain the gallbladder, a needle is inserted into the gallbladder using ultrasound guidance under local anesthesia. The incision is enlarged and a soft catheter is placed into the gallbladder.

**Central Venous Access** – During this procedure, a tube is inserted beneath the skin into the blood vessels to deliver medication or nutrients directly into the bloodstream. Can also be used to draw blood.

**Chemoembolization** – Delivers cancer-fighting agents directly to the site of a cancer tumor. Primarily used to treat cancers of the endocrine system, including melanoma and liver cancers.

**Hemodialysis Access Maintenance** – Uses angioplasty or thrombolysis to open blocked grafts for hemodialysis, a treatment for kidney failure.

**Needle Biopsy** – A diagnostic test for breast, lung and other areas of the body to test for abnormalities such as cancer or infection.

**Percutaneous Nephrostomy Drainage** – A tube is inserted into the kidney to treat kidney stones or hydronephrosis.

**Stent** – A small, flexible tube made of plastic or wire mesh used to treat a variety of medical conditions, including clogged blood vessels or other pathways that have been narrowed or blocked by tumors or obstructions. Stents also are used to treat urological conditions.

**Thrombolysis** – During this procedure, clot-busting drugs are injected at the site of the clot to dissolve blood clots.

**Angiojet** – A specialized catheter used in mechanical thrombectomy to remove or retrieve clots.

**Common Interventional Procedures**

**CT-Guided Biopsies** – Under the guidance of CT imaging, abnormal tissue is sampled with precision by our Interventional Radiologist.

**CT Guided Radiofrequency (RF) Ablation**

An interventional procedure which involves the insertion of needle electrodes into a tumor through the skin. Radiofrequency wave energy is then passed through the needle into the tumor. This energy causes friction which produces heat, this heat, in turn, induces coagulation necrosis and tumor cell death.

**Uterine Artery Embolization** – Used to stop life-threatening postpartum bleeding, potentially preventing hysterectomy. Also used to treat fibroid tumors (uterine fibroid embolization).

**Vertebroplasty/Kyphoplasty** – During this procedure, a needle is inserted through the skin into crushed vertebrae, using bone cement to stabilize the fractured bone. During kyphoplasty, a balloon is used to raise vertebrae prior to insertion of cement.