Mass General Imaging Locations

<table>
<thead>
<tr>
<th>Location</th>
<th>Address</th>
<th>Phone Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass General Imaging - Boston</td>
<td>55 Fruit Street, Boston, MA 02114</td>
<td>(617) 724–XRAY, (617) 724–9729</td>
</tr>
<tr>
<td>Mass General Imaging - Chelmsford</td>
<td>43 Village Square, Chelmsford, MA 01824</td>
<td>(978) 256–3553</td>
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<tr>
<td>Mass General Imaging - Chelsea</td>
<td>80 Everett Avenue, Chelsea, MA 02150</td>
<td>(617) 887–3500</td>
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<tr>
<td>Mass General Imaging - Worcester</td>
<td>385 Grove Street, Worcester, MA 01605</td>
<td>(508) 849–5000</td>
</tr>
<tr>
<td>Mass General Imaging - Waltham</td>
<td>40 Second Avenue, Waltham, MA 02451</td>
<td>(800) 697–8296, (617) 724–XRAY</td>
</tr>
<tr>
<td>Mass General Vascular Center</td>
<td>52 Second Avenue, Waltham, MA 02451</td>
<td>(887) 644–8346</td>
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<tr>
<td>Yawkey Center for Outpatient Care</td>
<td>55 Fruit Street, Boston, MA 02114</td>
<td>(617) 724–XRAY</td>
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<tr>
<td>MGH Chelsea HealthCare Center</td>
<td>151 Everett Avenue, Chelsea, MA 02150</td>
<td>(617) 889–8510</td>
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<tr>
<td>MGH Revere HealthCare Center</td>
<td>300 Ocean Avenue, Revere, MA 02151</td>
<td>(781) 485–6180</td>
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</tbody>
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Tests and Procedures for Vascular Conditions

© 2010 Massachusetts General Hospital.
Step-by-Step: How Imaging Works
What to expect on your journey through the diagnostic imaging process.

GETTING STARTED

- You and your doctor need information to plan your care.
- Your doctor schedules an exam at one of our convenient locations.
- For safety, you may need a blood test if your exam will use contrast—a drink or injection that makes the images more vivid.
- A member of our expert staff reviews your case and carefully selects a protocol—a combination of equipment settings and exam steps—to ensure we capture the best possible images.

EXAM DAY

- You may need to refrain from eating or drinking before your appointment.
- Upon your arrival, we double-check safety information and review the exam with you.
- You receive contrast (if needed).
- Your technologist, the trained professional performing your exam, remains nearby and in communication throughout.
- We capture and store diagnostic-quality images in an electronic library.

YOUR RESULTS

- A radiologist, a doctor trained to interpret radiological studies, examines the images.
- At Mass General Imaging this doctor is always a specialist— an expert in a particular area of the body or type of scan.
- The radiologist dictates a report including a diagnosis and recommendations.
- Your doctor receives the report and may also view your images.
- The information discovered through imaging helps your doctor plan the next steps in your care.

Welcome to Massachusetts General Hospital Imaging

Dedicated to delivering the clearest picture of your health.

- Convenient access to eight community locations for imaging tests
- Over 100 board-certified radiologists, each dedicated to an imaging subspecialty
- More than 600,000 imaging scans reviewed annually
- A full range of diagnostic imaging services and interventional procedures

When you come to Mass General Imaging you’ll get expert diagnosis—and clarity on the right course of care.

THE SPECIALIST ADVANTAGE

Mass General Imaging’s radiologists all specialize in a certain part of the body or condition. A specialist is capable of seeing and understanding subtle things due to advanced training and singular focus. In addition to the training that all radiologists receive, a specialist has additional education, as well as extensive real-world experience in interpreting images for a particular body area or system.
Exams and Procedures

Here’s a brief introduction to each kind of test or treatment you might need: How it works, why we use it, and what to expect.

CATHETER ANGIOGRAPHY

Fundamentals:

• A thin plastic tube called a catheter is inserted into a blood vessel through a small incision in your skin, often in the groin.

• A doctor guides the catheter to the area of interest and injects a contrast material through it.

• The contrast highlights your blood vessels, which are then imaged using X-rays and sometimes a video form of X-ray called fluoroscopy.

• Catheter angiography is used, for example, to examine blood vessels in various parts of the body for signs of atherosclerosis or other diseases.

Specialty expertise:

• A doctor called an interventional vascular specialist, who specializes in these types of procedures, will perform the exam.

• Your results will be interpreted by a doctor with specialized training in the health of the blood vessels.

What to expect:

• A catheter angiogram can last as little as an hour or as long as several hours.

• An intravenous (IV) line will be placed in your hand or arm to administer the contrast.

• If you are over 60 or have kidney disease, diabetes, lupus, or multiple myeloma, you’ll need a blood test beforehand to make sure the contrast will be safe for you.

• You may feel a flush of warmth when the contrast is injected; this is normal.

• You will be able to resume normal activities within a day after the study.

More information:
www.massgeneralimaging.org/angio
CTA
(COMPUTED TOMOGRAPHY ANGIOGRAPHY)

Fundamentals:

- CTA is a type of exam that uses CT technology to look at blood vessels.
- A CT scanner rotates to take X-ray images from different angles all around your body. A computer puts these images together to form detailed, two-dimensional pictures.
- CT provides clearer, more detailed pictures than traditional X-rays.
- CTA is typically used to examine blood vessels in the abdomen and chest.

Specialty expertise:

- We pay special attention to minimizing X-ray exposure—without giving up image quality.
- We use the latest technology, including 64-slice CT scanners.
- A radiologist with special training in CT and the vascular system will interpret your exam.

What to expect:

- Exams typically take 15 minutes in total; the actual scanning takes just minutes.
- You will receive an injection of contrast material to highlight your blood vessels.
- If you are over 60 or have kidney disease, diabetes, lupus, or multiple myeloma, you’ll need a blood test beforehand to make sure the contrast will be safe for you.
- The technologist performing your exam will be nearby and able to talk to you throughout the scan.
- CT exams require that you lie still in a confined space. But because the scanning time is so short, most people tolerate the experience well.

More information:
www.massgeneralimaging.org/ct

MINIMIZING RADIATION DOSE

Massachusetts General Hospital Imaging is committed to minimizing radiation exposure for all patients. In addition to multiple safeguards to prevent accidental exposure, we strive to continually improve the protocols that govern each type of scan—so that we can use less radiation but still obtain images sufficient for accurate diagnoses. Our radiation levels for typical scans are lower than the recommendations of the American College of Radiology, and our physicians are nationally recognized as leaders on this issue.
MRA (MAGNETIC RESONANCE ANGIOGRAPHY)

Fundamentals:
• An MRA is a type of exam that uses MR technology to look at your blood vessels.
• An MRI machine produces a strong magnetic field and radio waves. The atoms in your body respond to this energy in a certain way. The MRI detects this response and uses it to construct detailed images.
• MRI does not use X-ray radiation.
• MRA is used, for example, to detect atherosclerosis or aneurysm in the arms and legs.

Specialty expertise:
• All of our MRI machines are state-of-the-art, and we offer the latest technologies, such as high-resolution 3T (Tesla) scanners.
• We use protocols (equipment settings plus exam steps) that are specially designed to capture images of the brain and spinal cord.
• Every scan is interpreted by a radiologist who specializes in MRI and the vascular system.

What to expect:
• Exams typically take 45 minutes.
• You will receive an injection of contrast, which makes your blood vessels stand out in the images.
• If you are over 60 or have kidney disease, diabetes, lupus, or multiple myeloma, a blood test before your exam is necessary to make sure the contrast is safe for you.

More information:
www.massgeneralimaging.org/mri

VAScular EXPERTISE
Mass General Imaging has nine dedicated vascular radiologists—experts in diagnosing disease and injury of the vasculature and devising its therapy. Our clinicians are board-certified in radiology and fellowship trained with additional specialization in the vascular system. Each also has extensive training in the use of specific types of imaging, such as CT and MRI. Our doctors hold leadership positions in key professional societies that set guidelines for exam procedures and also play leadership roles in many research projects that advance the state of the art in vascular imaging and intervention. As members of the Mass General Vascular Center our doctors are part of a leading center for the management of vascular diseases, including varicose veins, deep vein thrombosis (DVT), peripheral arterial disease (PAD), pelvic congestion syndrome, traumatic vascular injuries, aortic aneurysms, and endocrine disorders.

• Because of the strong magnet, we need to make absolutely sure you don’t have any metal objects with you. We also need to know details about any implants in your body.
• The technologist performing your exam will be nearby and able to talk to you throughout the scan.
• MRI exams require that you lie still in a confined space. Most people have no problem, but talk to your doctor if you are concerned. Your doctor may prescribe a sedative (we cannot provide such medication).
ULTRASOUND

Fundamentals:

- Ultrasound uses high-frequency sound waves to create images of internal body structures.

- A special type of ultrasound called Doppler ultrasound can reveal the rate of blood flow through the blood vessels.

- Ultrasound can be used, for example, to detect blood clots and narrowing of blood vessels throughout the body.

Specialty expertise:

- State-of-the-art equipment ensures that the radiologist gets an ideal view and permits the making of 3D images.

- Your scan will be read by a Mass General radiologist specialty trained in ultrasound imaging and the vascular system.

What to expect:

- Ultrasound exams typically take 30 minutes.

- The exam is performed by a trained professional called a sonographer, who will apply a clear gel then move a handheld wand, called a transducer, over the area to be scanned.

- You will feel pressure from the transducer, but ultrasound is painless and does not use X-ray radiation.

- For certain exams, you may have to change positions or hold your breath.

More information:
www.massgeneralimaging.org/ultrasound

Beyond Diagnosis

In addition to diagnostic imaging, Mass General offers several procedures that use imaging technology to treat specific conditions. Specially trained doctors known as interventional vascular specialists perform these minimally invasive, image-guided procedures.

Peripheral Vascular Disease (PVD) treatments:

The following treatments all address PVD, and all involve using image guidance to insert a thin catheter to the point where a blood vessel is narrowed or blocked.

- Balloon angioplasty: Delivers a balloon that inflates to open a narrowed vessel, then is removed.

- Stenting: Positions a mesh tube to hold a narrowed vessel open.

- Thrombolytic therapy: Delivers medicine or a medical device that dissolves a blockage.

- Thrombectomy: Physically removes a blockage.

Endovenous Thermal Ablation (EVTA):

- Treats varicose veins.

- Uses heat energy to seal off problem veins.

- Relieves leg pain and swelling, improves appearance.

More information:
www.massgeneralimaging.org/treatments

Register as a Patient

All patients need to register as Mass General patients. This is a quick process that can be done over the phone. Please call 866-211-6588.

Schedule an Exam

A doctor’s order is required to schedule an exam. Your doctor can choose to order your test online or call the location directly. Talk to your doctor about which location might be most convenient for you.