

# Double-check Duplex Scan Documentation

Proper coding and reimbursement of services depend on it.

Coding for duplex scans can be tricky because provider reports do not always include the necessary documentation. Here's what you need to know about common duplex exams and the documentation challenges they present.

## Duplex Scan Basics

Duplex ultrasound is a non-invasive evaluation of blood flow in the arteries and veins comprised of real-time images integrating B-mode, two-dimensional vascular structure, Doppler spectral analysis, and color flow Doppler imaging.

Duplex scans combine conventional ultrasound with Doppler imaging. While conventional ultrasound imaging views the structure of blood vessels, Doppler ultrasound views the movement and speed of blood through these vessels. By combining these two methods of imaging, duplex scans produce color-coded images that show physicians where blood flow is blocked, as well as the extent of a blockage. Duplex scans may be used, for example, to diagnose peripheral vascular or arterial disease.

## CPT® Requirements

It is important to be aware of several requirements outlined in the CPT® code book for reporting duplex studies.

CPT® guidelines explain that non-invasive vascular studies include patient care required to perform non-invasive vascular studies and include supervision of the studies and interpretation of the study results. This is consistent with the usual pre-procedure work being bundled into a diagnostic study. As with any radiological study, the radiologist must provide an interpretation of the results.

Non-invasive vascular studies require a hard copy output with data analysis, including bi-directional vascular flow (arterial inflow and venous outflow) or imaging, when provided. Do not separately report



a duplex scan code for the use of a simple hand-held or other Doppler device that does not output a hard copy, or that produces a record that does not analyze bidirectional vascular flow, because it's considered part of the physical examination of the vascular system. Remember: A duplex scan characterizes the pattern and direction of blood flow in arteries or veins and produces real-time images integrating B-mode two-dimensional vascular structure, Doppler spectral analysis, and color flow Doppler imaging.

Use of color Doppler for anatomic structure identification only, with a real-time ultrasound examination, is not reported separately. The Doppler portion of the exam must be performed for true vascular analysis. When Doppler is used simply to determine if a structure is vascular, it does not constitute vascular analysis. A full and complete color Duplex with waveform analysis must be performed and documented.

## Complete vs. Limited Duplex Studies

Be careful when choosing between a limited or complete duplex study.

For example, a complete study of lower extremity arteries or bypass grafts (93925 *Duplex scan of lower extremity arteries or arterial bypass grafts; complete bilateral study*) consists of an examination of the full length of common femoral artery, superficial femoral artery, and



**Note:** Codes for non-invasive physiologic studies (93922-93924) mention "Doppler" in their code descriptors. These codes represent documented measurements only (no hard copy images for interpretation); whereas, duplex scans are imaging studies. Non-invasive physiologic studies and duplex scans may be reported together.



popliteal arteries in both extremities. The deep femoral and tibiopeoneal arteries may be imaged, if indicated, but it is not required for a complete exam. If an evaluation is performed of a lower extremity arterial bypass graft, the study must include the complete course of the lower extremity arterial bypass graft.

If any of the required elements listed are not documented, report 93926 *Duplex scan of lower extremity arteries or arterial bypass grafts; unilateral or limited study* instead of 93925.

A complete study of upper extremity arteries or bypass grafts (93930 *Duplex scan of upper extremity arteries or arterial bypass grafts; complete bilateral study*) consists of an examination of the subclavian artery, axillary artery, and brachial artery in both extremities. The radial and ulnar arteries also may be imaged, when indicated, but are not required for a complete exam. If an evaluation is performed of an upper extremity arterial bypass graft, the study must include the complete course of the upper extremity arterial bypass graft. If any of the required elements are not documented, report 93931 *Duplex scan of upper extremity arteries or arterial bypass grafts; unilateral or limited study* instead of 93930.

When reporting 93970 *Duplex scan of extremity veins including responses to compression and other maneuvers; complete bilateral study*, the following must be documented:

When coding duplex studies, remember that real-time and spectral Doppler images are included.

- common femoral vein;
- superficial femoral vein;
- proximal deep femoral;
- greater saphenous; and
- popliteal veins.

The calf veins may also be evaluated. To assign code 93970 for an upper extremity study, the subclavian, jugular, axillary, brachial, basilic and cephalic veins must be evaluated. Veins in the forearm may also be evaluated. If any of the required elements are not documented, report instead 93971 *Duplex scan of extremity veins including responses to compression and other maneuvers; unilateral or limited study*.

As indicated by the “and/or” in some duplex code descriptions, these codes may be assigned when either multiple organs are studied or a single organ listed is studied.

For organs that are bilateral (e.g., kidneys, ovaries, testicles), both the right and left must be completely assessed to use 93975 *Duplex scan of arterial inflow and venous outflow of abdominal, pelvic, scrotal contents and/or retroperitoneal organs; complete study*. To assign a complete study, there must be documentation of all major vessels supplying blood flow, both arterial inflow and venous outflow, for the organ evaluated. Color flow mapping may be done in these instances. If both arterial inflow and venous outflow are not noted, assign 93976 *Duplex scan of arterial inflow and venous outflow of abdominal, pelvic, scrotal contents and/or retroperitoneal organs; limited study*.

Use 93978 *Duplex scan of aorta, inferior vena cava, iliac vasculature, or bypass grafts; complete study* when only one vessel is listed or multiple vessels are evaluated through their entire intra-abdominal or pelvic course. If the examined single vessel is not studied through its entire course, assign the limited code 93979 *Duplex scan of aorta, inferior vena cava, iliac vasculature, or bypass grafts; unilateral or limited study*.

### Required Documentation

Perhaps the biggest challenge for coders is determining whether diagnostic reports contain the required information for assigning a duplex code.

When coding duplex studies, real-time and spectral Doppler images are included. Color Doppler, when used only for structure identification, is not an indication for a duplex study CPT® code to be used. Both spectral analysis and color flow must be documented

to assign one of the duplex codes, and a report should document the velocity measurements of blood flow.

The American College of Radiology's (ACR) *Ultrasound Coding User's Guide* explains, "Assessing flow with color, recording a waveform and reporting the findings in a medically indicated examination are the key elements to look for in a report."

In the report, you should see documentation of blood flow velocity measurements, or you might see phrases such as "waveform normal," "spectral Doppler showed no flow," or "normal triphasic waveform patterns using Doppler interrogation." Several terms that indicate spectral analysis are:

- Acceleration rate
- Monophasic
- Biphasic or triphasic waveforms
- Peak systolic velocity
- Resistive index (RI)
- Velocity
- Waveform analysis
- Pulsed Doppler
- Spectral Doppler

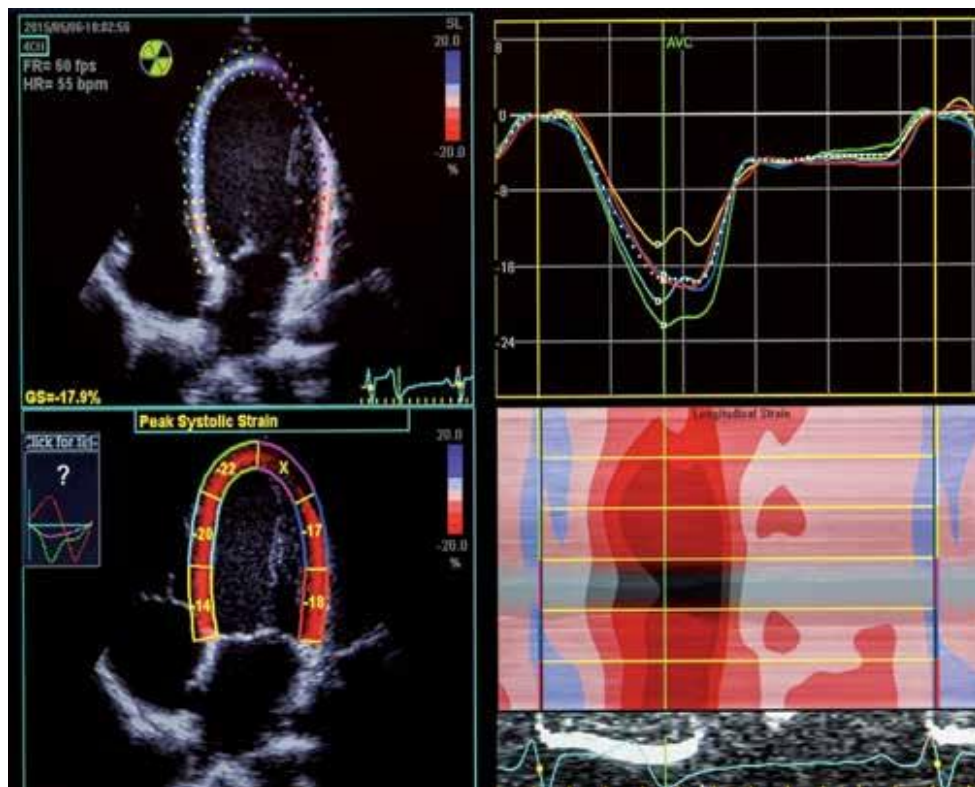
For all duplex exams, at a minimum, the technique should contain a statement with verbiage similar to, "A duplex Doppler study was performed, consisting of integrated two-dimensional (2D) real-time imaging; color flow Doppler and Doppler spectral analysis . . ."

In addition to the technique specifically mentioning color flow Doppler and spectral analysis, the findings should clearly reflect the performance of these components by containing the appropriate measurements and language in the body of the report. The interpretation and results of these studies should be documented in the report similarly to the following examples from *Clinical Examples in Radiology*, Vol. 4, Issue 2 (Spring 2008) and Vol. 3, Issue 2 (Spring 2007):

- **Duplex of Kidneys (93975):** "By color interrogation, the renal arteries and veins bilaterally are patent, and resistive indices are within normal limits. The renal/aortic peak systolic ratios (RAR) are within normal limits. Pulsatility indices (PI) and resistivity indices (RI) are normal. There is no evidence of pulsus parvus or tardus. Normal low resistance flow is demonstrated in the distal renal arteries. Renal veins demonstrate a normal flow pattern."

Comment: Color interrogation is noted along with comment on both the arteries (inflow) and veins (outflow) as well as RAR and indices PI and RI specific to this type of exam.

- **Duplex of Ovaries (93975):** "Both color flow and spectral Doppler imaging were performed. Additional imaging



demonstrates a high resistance flow pattern with an elevated resistivity index (RI) in the right ovarian artery. On both color flow and spectral Doppler, no flow can be demonstrated within the right ovary or in the right ovarian vein. There is normal arterial flow and RI in the left ovarian artery. Color flow Doppler demonstrates blood flow in the left ovary. Spectral Doppler demonstrates normal left ovarian venous blood flow."

Comment: Both color flow and spectral Doppler are noted along with comment on both the arteries (inflow) and veins (outflow) as well as appropriate indices RI.

- **Duplex of Abdominal Aorta (93978):** "Color Doppler flow completely fills the lumen of the aorta with no mural clot or plaques demonstrated. Spectral Doppler analysis demonstrates a normal high resistance flow pattern throughout the abdominal aorta. Peri-aortic soft tissues are within normal limits."

Comment: Both color Doppler and spectral Doppler are noted in addition to a statement on the flow pattern.

- **Duplex of Lower Extremity Veins (93971):** "The right common femoral vein, superficial femoral vein, proximal deep femoral, greater saphenous and popliteal veins were examined. There is normal flow, compressibility, and augmentation demonstrated on Doppler spectral analysis."

Comment: Both color flow Doppler and spectral analysis are noted, and there is characterization of blood flow in the findings.



## Duplex and Ultrasound

When both conventional ultrasound studies and duplex studies are ordered, both exams must be adequately documented in the report, and medical necessity must also be documented by the presenting clinical indications. National Correct Coding Initiative (NCCI) edits are in place for ultrasound and duplex studies performed on the same date of service, so always check the edits to determine when a modifier (e.g., modifier 59 *Distinct procedural service*) is needed. The NCCI Policy Manual, chapter 9, explains:

Abdominal ultrasound examinations (CPT codes 76700-76775) and abdominal duplex examinations (CPT codes 93975, 93976) are generally performed for different clinical scenarios although there are some instances where both types of procedures are medically reasonable and necessary. In the latter case, the abdominal ultrasound procedure CPT code should be reported with an NCCI-associated modifier.

## Diagnostic Test Orders and Duplex Studies

A common question is whether a test order is necessary to perform a duplex study when an ultrasound has been ordered by the referring physician.

Doppler studies should not be routinely added to ultrasounds. Performing a Doppler study with an ordered ultrasound is considered to be a test design exception, according to the rules for ordering diagnostic tests. The Doppler study must be medically necessary to accurately diagnose the patient, and the radiologist should document a detailed explanation of why the Doppler was medically necessary in the procedure report. (*Clinical Examples in Radiology*, Vol. 9, Issue 1: Winter 2013). **HBM**



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### Resources

- Clinical Examples in Radiology*, Vol. 4, Issue 2 (Spring 2008)
- Clinical Examples in Radiology*, Vol. 3, Issue 2 (Spring 2007)
- National Correct Coding Initiative manual, chapter 9
- Clinical Examples in Radiology*, Vol. 9, Issue 1 (Winter 2013)



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