

MARY WASHINGTON HEALTHCARE IMAGING SERVICES

LOWER EXTREMITY GRAFT DUPLEX CRITERIA

Abnormal graft findings:

1. Local elevations of peak systolic velocities (PSV) of 150-200 cm/sec suggest a possible focal abnormality
2. Velocity ratio $> 2.0 = 50\%$ diameter reduction.
3. Velocity ratio of $3.7 - 4 = 75\%$ or greater stenosis.
4. Velocity < 45 cm/sec is at risk for occlusion, although this may be normal in graft with a large lumen. Later stages of stenosis will have a decreased velocity along entire graft.

Note: In the presence of significantly increased velocities, the ratio should be reported. This ratio would be obtained by dividing the PSV by the adjacent "normal" systolic velocity.

Abnormal native findings

1. Native Vessels (Artery proximal and distal to the graft):
PSV ≥ 200 cm/s or a 2-3x increase in velocities suggest a significant stenosis.

References:

1. AIUM March 1998 Meet the Professor Session, Dr JF Polak, MD MPH
2. Mills JL, Harris EJ, Taylor LM Jr., Beckett WC, Porter JM. The importance of routine surveillance of distal bypass grafts with duplex scanning: a study of 379 reversed vein grafts. J Vasc Surg 1990; 12:379-389
3. Idu MM, Blanckstein JD, de Gier P, Truyen E, Buth J. Impact of color-flow duplex surveillance program on infrainguinal vein graft patency; a five year experience. J Vasc Surgery 1993; 130:42-53
4. Mohan C., Hoballah J, Scheuppert M, Sharp W, Kresowik T, Miller E, Corson J. Should all in situ saphenous vein bypasses undergo permanent duplex surveillance? Arch Surg 1995; 130: 483-8
5. Mills JL, Bandyk DF, Gathan V, Esses GE, The origin of infrainguinal vein graft stenosis: A prospective study based on duplex surveillance. J Vasc Surg 1995; 21: 16-25.

[Rev 2/13]