

PERIPHERAL ARTERIAL DISEASE

NONINVASIVE VASCULAR LABORATORY

TOBIAS LEE, MD • CLEVELAND CLINIC CRITERIA UNLESS OTHERWISE NOTED • UPDATED 11 DECEMBER 2007

CAROTID ULTRASOUND

PEAK SYSTOLE/DIASTOLE	DIAMETER REDUCTION
< 105 cm/sec (no plaque)	0 - 19%
< 105 cm/sec (plaque)	20 - 39%
105 - 150 cm/sec	40 - 59%
151 - 240 cm/sec	60 - 79%
> 240 / > 135 cm/sec	80 - 99%
ICA/CCA ratio > 4.0	60 - 79%
<i>antegrade flow red</i>	

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PEAK SYSTOLE/DIASTOLE	DIAMETER REDUCTION
< 125 / < 40 cm/sec (no plaque)	normal
ICA/CCA ratio < 2.0	
< 125 cm/sec (plaque)	< 50%
(ICA/CCA ratio < 2.0)	
125 - 230 cm/sec	50 - 69%
(ICA/CCA ratio 2.0 - 4.0)	
> 230 cm/sec	≥ 70%
(ICA/CCA ratio > 4.0)	

ANKLE BRACHIAL INDEX

RATIO	DISEASE SEVERITY
0.9 - 1.0	normal
0.70 - 0.89	mild disease
0.40 - 0.69	moderate disease
< 0.40	severe disease

CELIAC DISEASE

PEAK SYSTOLE	DISEASE SEVERITY
< 250 cm/sec	0 - 69%
> 250 cm/sec	70 - 99%

SMA/IMA DISEASE

PEAK SYSTOLE	DISEASE SEVERITY
< 275 cm/sec	0 - 69%
> 275 cm/sec	70 - 99%

RENAL DISEASE

RESISTIVE INDEX - (PSV - EDV) / PSV

0.53 - 0.70	normal
> 0.70	may indicate: diabetic nephrosclerosis hypertensive nephrosclerosis

RENAL TO AORTIC RATIO

≤ 3.5	normal
> 3.5	60 - 99%

ACCELERATION TIME

< 100 msec	normal
≥ 100 msec	may suggest RAS

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PEAK SYSTOLE	RAR	DISEASE SEVERITY
< 180 cm/s	< 3.5	normal
≥ 180 cm/s	< 3.5	< 60%
—	≥ 3.5	≥ 60%
occlusion	—	100%

LOWER EXTREMITY ARTERIAL DUPLEX

PEAK SYSTOLIC VELOCITY	DISEASE SEVERITY
Normal	0-19%
Less than double closest normal	20-49%
Double proximal adjacent segment	50-99%
No flow	100%