American College of Radiology  
ACR Appropriateness Criteria®  

Radiologic Management of Lower-Extremity Venous Insufficiency

Variant 1:  Asymptomatic bilateral great saphenous venous insufficiency with visible varicose veins. Patient desires treatment for cosmesis.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>SOE</th>
<th>Adults RRL</th>
<th>Peds RRL</th>
<th>Rating</th>
<th>Median</th>
<th>Final Tabulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endoluminal laser therapy</td>
<td>Usually appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>8</td>
<td>n/a</td>
<td>0 0 0 0 0 0 0 0 0</td>
<td></td>
</tr>
<tr>
<td>Endoluminal radiofrequency therapy</td>
<td>Usually appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>8</td>
<td>n/a</td>
<td>0 0 0 0 0 0 0 0 0</td>
<td></td>
</tr>
<tr>
<td>Surgical vein stripping</td>
<td>May be appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>4</td>
<td>n/a</td>
<td>0 0 0 0 0 0 0 0 0</td>
<td></td>
</tr>
<tr>
<td>Injection sclerotherapy</td>
<td>May be appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>4</td>
<td>n/a</td>
<td>0 0 0 0 0 0 0 0 0</td>
<td></td>
</tr>
<tr>
<td>Compression stocking therapy only</td>
<td>Usually not appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>2</td>
<td>n/a</td>
<td>0 0 0 0 0 0 0 0 0</td>
<td></td>
</tr>
<tr>
<td>No therapy</td>
<td>Usually not appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>1</td>
<td>n/a</td>
<td>0 0 0 0 0 0 0 0 0</td>
<td></td>
</tr>
</tbody>
</table>

Variant 2:  Left small saphenous venous insufficiency resulting in intermittent pain and swelling without skin discoloration or ulceration.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>SOE</th>
<th>Adults RRL</th>
<th>Peds RRL</th>
<th>Rating</th>
<th>Median</th>
<th>Final Tabulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endoluminal radiofrequency therapy</td>
<td>Usually appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>8</td>
<td>n/a</td>
<td>0 0 0 0 0 0 0 0 0</td>
<td></td>
</tr>
<tr>
<td>Procedure</td>
<td>Appropriateness Category</td>
<td>SOE</td>
<td>Adults RRL</td>
<td>Peds RRL</td>
<td>Rating</td>
<td>Median</td>
<td>Final Tabulations</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---------------------------</td>
<td>-----</td>
<td>------------</td>
<td>----------</td>
<td>--------</td>
<td>--------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Compression stocking therapy only</td>
<td>Usually appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>7</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Endoluminal laser therapy</td>
<td>Usually appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>8</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Surgical vein stripping</td>
<td>May be appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>5</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Injection sclerotherapy</td>
<td>May be appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>4</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>No therapy</td>
<td>Usually not appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>2</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
</tbody>
</table>

**Variant 3:** Left great saphenous venous insufficiency with associated lower leg skin ulceration.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>SOE</th>
<th>Adults RRL</th>
<th>Peds RRL</th>
<th>Rating</th>
<th>Median</th>
<th>Final Tabulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endoluminal laser therapy</td>
<td>Usually appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>8</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Endoluminal radiofrequency therapy</td>
<td>Usually appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>8</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Surgical vein stripping</td>
<td>May be appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>5</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Injection sclerotherapy</td>
<td>May be appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>4</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Compression stocking therapy only</td>
<td>Usually not appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>1</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>No therapy</td>
<td>Usually not appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>1</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
</tbody>
</table>

**Variant 4:** Symptomatic bilateral great saphenous venous insufficiency and large visible varicose veins during pregnancy.
<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>SOE</th>
<th>Adults RRL</th>
<th>Peds RRL</th>
<th>Rating</th>
<th>Median</th>
<th>Final Tabulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compression stocking therapy only</td>
<td>Usually appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>9</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>No therapy</td>
<td>May be appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>4</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Surgical vein stripping</td>
<td>Usually not appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>2</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Endoluminal laser therapy</td>
<td>Usually not appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>2</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Endoluminal radiofrequency therapy</td>
<td>Usually not appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>2</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Injection sclerotherapy</td>
<td>Usually not appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>2</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
</tbody>
</table>

**Variant 5:** Chronic left femoral venous thrombosis with left great saphenous venous insufficiency and lower-extremity swelling.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>SOE</th>
<th>Adults RRL</th>
<th>Peds RRL</th>
<th>Rating</th>
<th>Median</th>
<th>Final Tabulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compression stocking therapy only</td>
<td>Usually appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>9</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Venous recanalization</td>
<td>May be appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>6</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Anticoagulation</td>
<td>May be appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>6</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Surgical vein stripping</td>
<td>Usually not appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>1</td>
<td>n/a</td>
<td>0</td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
</tbody>
</table>
### Variant 6: Symptomatic bilateral great saphenous venous insufficiency with remote history of deep venous thrombosis with no residual thrombus present.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>SOE</th>
<th>Adults RRL</th>
<th>Peds RRL</th>
<th>Rating</th>
<th>Median</th>
<th>Final Tabulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compression stocking therapy only</td>
<td>Usually appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>8</td>
<td>n/a</td>
<td></td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Endoluminal laser therapy</td>
<td>Usually not appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>7</td>
<td>n/a</td>
<td></td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Endoluminal radiofrequency therapy</td>
<td>Usually not appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>7</td>
<td>n/a</td>
<td></td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Surgical vein stripping</td>
<td>May be appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>5</td>
<td>n/a</td>
<td></td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>Injection sclerotherapy</td>
<td>May be appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>4</td>
<td>n/a</td>
<td></td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
<tr>
<td>No therapy</td>
<td>Usually not appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>2</td>
<td>n/a</td>
<td></td>
<td>0 0 0 0 0 0 0 0 0</td>
</tr>
</tbody>
</table>

### Variant 7: Right great saphenous venous insufficiency status post vein stripping 1 year ago with persistent lower-extremity swelling. Reflux is noted in the below-knee greater saphenous vein measuring up to 5 mm.
<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>SOE</th>
<th>Adults RRL</th>
<th>Peds RRL</th>
<th>Rating</th>
<th>Median</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compression stocking therapy only</td>
<td>May be appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>5</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Endoluminal laser therapy</td>
<td>Usually appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>8</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Endoluminal radiofrequency therapy</td>
<td>Usually appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>8</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Repeat surgical vein stripping</td>
<td>May be appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>4</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Injection sclerotherapy</td>
<td>May be appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>4</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>No therapy</td>
<td>Usually not appropriate</td>
<td>N/A</td>
<td>N/A</td>
<td>2</td>
<td>n/a</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Appendix Key
A more complete discussion of the items presented below can be found by accessing the supporting documents at the designated hyperlinks.

**Appropriateness Category**: The panel's recommendation for a procedure based on the assessment of the risks and benefits of performing the procedure for the specified clinical scenario.

**SOE**: Strength of Evidence. The assessment of the amount and quality of evidence found in the peer reviewed medical literature for an appropriateness recommendation.

- **References**: The citation number and PMID for the reference(s) associated with the recommendation.
- **Study Quality**: The assessment of the quality of an individual reference based on the number of study quality elements described in the reference.

**RRL**: Relative Radiation Level. A population based assessment of the amount of radiation a typical patient may be exposed to during the specified procedure.

**Rating**: The final rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

**Median**: The median rating (1-9 scale) for the procedure as determined by the panel during rating rounds.

**Final tabulations**: A histogram showing the number of panel members who rated the procedure as noted in the column heading (ie, 1, 2, 3, etc.).

Additional supporting documents about the AC methodology and processes can be found at [www.acr.org/ac](http://www.acr.org/ac).