### Table A1: Appropriateness Criteria for Revascularization Ratings

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**Agreement Column Key**

*"+" sign: Indicates agreement between panelists. Agreement is reached when four or fewer panelists’ ratings fell outside the 3-point region containing the median appropriateness criteria score.*

*"-" sign: Indicates disagreement between panelists. Disagreement is reached when at least five panelists’ ratings fell in the appropriate category AND at least five panelists’ ratings fell in the inappropriate category for a specific indication.*

*Blank: Indicates neither agreement nor disagreement as defined above. For indications where neither a "+" or "-" sign appear, more than four panelists rated outside the 3-point region containing the median appropriateness criteria score; but scores were not so disperse to meet the requirements of disagreement noted above.*
Table A1: Appropriateness Criteria for Revascularization Ratings

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<td>STEMI or NSTEMI and successful PCI of culprit artery during index hospitalization&lt;br&gt;• Symptoms of recurrent myocardial ischemia and/or high-risk findings on non-invasive stress testing performed after index hospitalization&lt;br&gt;• Revascularization of one or more additional coronary arteries</td>
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<td>Patients with acute myocardial infarction (STEMI or NSTEMI)&lt;br&gt;• Evidence of cardiogenic shock&lt;br&gt;• Revascularization of one or more coronary arteries</td>
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Table 2. Patients without Prior Bypass Surgery

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Agreement Column Key

"+" sign: Indicates agreement between panelists. Agreement is reached when four or fewer panelists’ ratings fell outside the 3-point region containing the median appropriateness criteria score.

"-" sign: Indicates disagreement between panelists. Disagreement is reached when at least five panelists’ ratings fell in the appropriate category AND at least five panelists’ ratings fell in the inappropriate category for a specific indication.

Blank: Indicates neither agreement nor disagreement as defined above. For indications where neither a "+" or "-" sign appear, more than four panelists rated outside the 3-point region containing the median appropriateness criteria score; but scores were not so disperse to meet the requirements of disagreement noted above.
Table A1: Appropriateness Criteria for Revascularization Ratings

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Agreement Column Key

*"+" sign:* Indicates agreement between panelists. Agreement is reached when four or fewer panelists’ ratings fell outside the 3-point region containing the median appropriateness criteria score.

*"-" sign:* Indicates disagreement between panelists. Disagreement is reached when at least five panelists’ ratings fell in the appropriate category AND at least five panelists’ ratings fell in the inappropriate category for a specific indication.

Blank: Indicates neither agreement nor disagreement as defined above. For indications where neither a "+" or "-" sign appear, more than four panelists rated outside the 3-point region containing the median appropriateness criteria score; but scores were not so disperse to meet the requirements of disagreement noted above.
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**Agreement Column Key**

"+" sign: Indicates agreement between panelists. Agreement is reached when four or fewer panelists’ ratings fell outside the 3-point region containing the median appropriateness criteria score.

"-" sign: Indicates disagreement between panelists. Disagreement is reached when at least five panelists’ ratings fell in the appropriate category AND at least five panelists’ ratings fell in the inappropriate category for a specific indication.

Blank: Indicates neither agreement nor disagreement as defined above. For indications where neither a "+" or "-" sign appear, more than four panelists rated outside the 3-point region containing the median appropriateness criteria score; but scores were not so disperse to meet the requirements of disagreement noted above.
## Table A1: Appropriateness Criteria for Revascularization Ratings

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### Agreement Column Key

*"+" sign:* Indicates agreement between panelists. Agreement is reached when four or fewer panelists’ ratings fell outside the 3-point region containing the median appropriateness criteria score.

*"-" sign:* Indicates disagreement between panelists. Disagreement is reached when at least five panelists’ ratings fell in the appropriate category AND at least five panelists’ ratings fell in the inappropriate category for a specific indication.

**Blank:** Indicates neither agreement nor disagreement as defined above. For indications where neither a "+" or "-" sign appear, more than four panelists rated outside the 3-point region containing the median appropriateness criteria score; but scores were not so disperse to meet the requirements of disagreement noted above.
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Agreement Column Key

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Agreement Column Key
*+* sign: Indicates agreement between panelists. Agreement is reached when four or fewer panelists’ ratings fell outside the 3-point region containing the median appropriateness criteria score.
*-* sign: Indicates disagreement between panelists. Disagreement is reached when at least five panelists’ ratings fell in the appropriate category AND at least five panelists’ ratings fell in the inappropriate category for a specific indication.
Blank: Indicates neither agreement nor disagreement as defined above. For indications where neither a "+" or "-" sign appear, more than four panelists rated outside the 3-point region containing the median appropriateness criteria score; but scores were not so disperse to meet the requirements of disagreement noted above.
### Table A1: Appropriateness Criteria for Revascularization Ratings

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Table 3. Patients with Prior Bypass Surgery (without acute coronary syndromes)

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**Agreement Column Key**

*"* sign: Indicates agreement between panelists. Agreement is reached when four or fewer panelists' ratings fell outside the 3-point region containing the median appropriateness criteria score.

*"+" sign: Indicates disagreement between panelists. Disagreement is reached when at least five panelists' ratings fell in the appropriate category AND at least five panelists' ratings fell in the inappropriate category for a specific indication.

Blank: Indicates neither agreement nor disagreement as defined above. For indications where neither a "*" or "+" sign appear, more than four panelists rated outside the 3-point region containing the median appropriateness criteria score; but scores were not so disperse to meet the requirements of disagreement noted above.
### Table A1: Appropriateness Criteria for Revascularization Ratings

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**Agreement Column Key**

- "*" sign: Indicates agreement between panelists. Agreement is reached when four or fewer panelists’ ratings fell outside the 3-point region containing the median appropriateness criteria score.
- "**" sign: Indicates disagreement between panelists. Disagreement is reached when at least five panelists’ ratings fell in the appropriate category AND at least five panelists’ ratings fell in the inappropriate category for a specific indication.
- Blank: Indicates neither agreement nor disagreement as defined above. For indications where neither a "*" or "**" sign appear, more than four panelists rated outside the 3-point region containing the median appropriateness criteria score; but scores were not so dispersed to meet the requirements of disagreement noted above.
Table A1: Appropriateness Criteria for Revascularization Ratings

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Agreement Column Key

*"+" sign: Indicates agreement between panelists. Agreement is reached when four or fewer panelists’ ratings fell outside the 3-point region containing the median appropriateness criteria score.

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Table A1: Appropriateness Criteria for Revascularization Ratings

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<td>LIMA was used as a graft but is no longer functional</td>
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</table>

**Agreement Column Key**

"+" sign: Indicates agreement between panelists. Agreement is reached when four or fewer panelists’ ratings fell outside the 3-point region containing the median appropriateness criteria score.

"-" sign: Indicates disagreement between panelists. Disagreement is reached when at least five panelists’ ratings fell in the appropriate category AND at least five panelists’ ratings fell in the inappropriate category for a specific indication.

Blank: Indicates neither agreement nor disagreement as defined above. For indications where neither a "+" or "-" sign appear, more than four panelists rated outside the 3-point region containing the median appropriateness criteria score; but scores were not so dispersed to meet the requirements of disagreement noted above.
## Appropriate Indications (Median Score 7-9)

### Patients with Acute Coronary Syndromes

| 1. | STEMI  
|    | Less than or equal to 12 hours from onset of symptoms  
|    | Revascularization of the culprit artery  
|    | 9 (A) |
| 2. | STEMI  
|    | Onset of symptoms within the prior 12 to 24 hours  
|    | Severe HF, persistent ischemic symptoms or hemodynamic or electrical instability present  
|    | 9 (A) |
| 4. | STEMI with presumed successful treatment with fibrinolysis  
|    | Evidence of HF, recurrent ischemia, or unstable ventricular arrhythmias present  
|    | One vessel coronary artery disease, presumed to be the culprit artery  
|    | 9 (A) |
| 6. | STEMI with presumed successful treatment with fibrinolysis  
|    | Asymptomatic; no HF, no recurrent ischemic symptoms, or no unstable ventricular arrhythmias at time of presentation  
|    | Depressed LVEF  
|    | Three vessel coronary artery disease  
|    | Elective/semi-elective revascularization  
|    | 8 (A) |
| 8. | STEMI or NSTEMI and successful PCI of culprit artery during index hospitalization  
|    | Symptoms of recurrent myocardial ischemia and/or high-risk findings on non-invasive stress testing performed after index hospitalization  
|    | Revascularization of one or more additional coronary arteries  
|    | 8 (A) |
| 9. | UA/NSTEMI and high-risk features for short term risk of death or nonfatal MI  
|    | Revascularization of the presumed culprit artery  
|    | 9 (A) |
| 10. | UA/NSTEMI and high-risk features for short term risk of death or nonfatal MI  
|    | Revascularization of multiple coronary arteries when the culprit artery cannot be clearly determined  
|    | 9 (A) |
11. Patients with acute myocardial infarction (STEMI or NSTEMI)  
   - Evidence of cardiogenic shock  
   - Revascularization of one or more coronary arteries

### Patients without Prior Bypass Surgery

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<tr>
<th>CCS Angina Class</th>
<th>Asymptomatic</th>
<th>I or II</th>
<th>III or IV</th>
<th>Appropriateness Score (1-9)</th>
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</table>
| 13. | One or two vessel coronary artery disease without involvement of proximal LAD  
   - Low-risk findings on non-invasive testing  
   - Receiving a course of maximal anti-ischemic medical therapy | | | 7 (A) |
| 15. | One or two vessel coronary artery disease without involvement of proximal LAD  
   - Intermediate risk-findings on non-invasive testing  
   - Receiving a course of maximal anti-ischemic medical therapy | | 7 (A) | 8 (A) |
| 16. | One or two vessel coronary artery disease without involvement of proximal LAD  
   - High-risk findings on non-invasive testing  
   - Receiving no or minimal anti-ischemic medical therapy | | 7 (A) | 8 (A) |
| 17. | One or two vessel coronary artery disease without involvement of proximal LAD  
   - High-risk findings on non-invasive testing  
   - Receiving a course of maximal anti-ischemic medical therapy | | 7 (A) | 8 (A) | 9 (A) |
| 18. | One or two vessel coronary artery disease without involvement of proximal LAD  
   - No non-invasive testing performed | | | 7 (A) |
| 20. | One or two vessel coronary artery disease with borderline stenosis “50%-60%”  
   - No non-invasive testing performed or equivocal test results present  
   - FFR less than 0.75 and/or IVUS with significant reduction in cross sectional area. | | | 7 (A) |
<p>| 25. | Chronic total occlusion of one major epicardial | | | 7 (A) |</p>
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<tr>
<th></th>
<th>coronary artery, without other coronary stenoses</th>
<th>Intermediate-risk criteria on non-invasive testing</th>
<th>Receiving a course of maximal anti-ischemic medical therapy</th>
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<td>Chronic total occlusion of one major epicardial coronary artery, without other coronary stenoses</td>
<td>High-risk findings on non-invasive testing</td>
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<td>27.</td>
<td>Chronic total occlusion of one major epicardial coronary artery, without other coronary stenoses</td>
<td>High-risk criteria on non-invasive testing</td>
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<td>One vessel disease involving the proximal LAD</td>
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<td>Three vessel coronary artery disease (no left main)</td>
<td>Low-risk findings on non-invasive testing including normal LV systolic function</td>
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**Patients with Prior Bypass Surgery (Without Acute Coronary Syndromes)**

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| **52.** | - One or more stenoses in saphenous vein graft(s)  
  - High-risk findings on non-invasive testing  
  - Receiving no or minimal anti-ischemic medical therapy | 7 (A) | 7 (A) |
| **53.** | - One or more stenoses in saphenous vein graft(s)  
  - High-risk findings on non-invasive testing  
  - Receiving a course of maximal anti-ischemic medical therapy | 7 (A) | 8 (A) | 9 (A) |
| **55.** | - One or more lesions in native coronary arteries without bypass grafts  
  - All bypass grafts patent and without significant disease  
  - Low-risk findings on non-invasive testing including normal LV systolic function  
  - Receiving a course of maximal anti-ischemic medical therapy |   | 7 (A) |
| **56.** | - One or more lesions in native coronary arteries without bypass grafts  
  - All bypass grafts patent and without significant disease  
  - Intermediate-risk findings on non-invasive testing  
  - Receiving no or minimal anti-ischemic medical therapy |   | 7 (A) |
| **57.** | - One or more lesions in native coronary arteries without bypass grafts  
  - All bypass grafts patent and without significant disease  
  - Intermediate-risk findings on non-invasive testing  
  - Receiving a course of maximal anti-ischemic medical therapy |   | 8 (A) |
| **58.** | - One or more lesions in native coronary arteries without bypass grafts  
  - All bypass grafts patent and without significant disease  
  - High-risk findings on non-invasive testing  
  - Receiving no or minimal anti-ischemic medical therapy | 7 (A) | 8 (A) |
| **59.** | - One or more lesions in native coronary arteries |    | 8 (A) | 9 (A) |
- All bypass grafts patent and without significant disease
- High-risk finding on non-invasive testing
- Receiving a course of maximal anti-ischemic medical therapy

**Method of Revascularization:**

*Advanced Coronary Disease*, CCS Angina Greater than or Equal to Class III and/or Evidence of Intermediate- to High-Risk Findings on Non-Invasive Testing

<table>
<thead>
<tr>
<th>Case</th>
<th>PCI Appropriateness Rating</th>
<th>CABG Appropriateness Rating</th>
<th>Appropriateness Score (1-9)</th>
</tr>
</thead>
</table>
| 60.  | Two vessel coronary artery disease with proximal LAD stenosis  
     | No diabetes and normal LVEF | 8 (A)                       | 8 (A)                       |
| 61.  | Two vessel coronary artery disease with proximal LAD stenosis  
     | Diabetes                   | 7 (A)                       | 8 (A)                       |
| 62.  | Two vessel coronary artery disease with proximal LAD stenosis  
     | Depressed LVEF             | 7 (A)                       | 8 (A)                       |
| 63.  | Three vessel coronary artery disease  
     | No diabetes and normal LVEF |                             | 8 (A)                       |
| 64.  | Three vessel coronary artery disease  
     | Diabetes                   |                             | 9 (A)                       |
| 65.  | Three vessel coronary artery disease  
     | Depressed LVEF             |                             | 9 (A)                       |
| 66.  | Isolated left main stenosis  
     | No diabetes and normal LVEF |                             | 9 (A)                       |
| 67.  | Isolated left main stenosis  
     | Diabetes                   |                             | 9 (A)                       |
| 68.  | Isolated left main stenosis  
<pre><code> | Depressed LVEF             |                             | 9 (A)                       |
</code></pre>
<p>| 69.  | Left main stenosis and additional coronary artery disease |                             | 9 (A)                       |</p>
<table>
<thead>
<tr>
<th>No diabetes and normal LVEF</th>
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</table>

70.  
- Left main stenosis and additional coronary artery disease  
- Diabetes  

| Left main stenosis and additional coronary artery disease  
|----------------------------| 9 (A) |
| Depressed LVEF |

71.  
- Left main stenosis and additional coronary artery disease  
- Depressed LVEF  

| Left main stenosis and additional coronary artery disease  
|----------------------------| 9 (A) |
| Depressed LVEF |

72.  
- Prior bypass surgery with native three-vessel disease and failure of multiple bypass grafts  
- LIMA remains patent to a native coronary artery  
- Depressed LVEF  

| Prior bypass surgery with native three-vessel disease and failure of multiple bypass grafts  
|----------------------------| 7 (A) |
| LIMA remains patent to a native coronary artery  
| Depressed LVEF |

73.  
- Prior bypass surgery with native three-vessel disease and failure of multiple bypass grafts  
- LIMA was used as a graft but is no longer functional  
- Depressed LVEF  

| Prior bypass surgery with native three-vessel disease and failure of multiple bypass grafts  
|----------------------------| 8 (A) |
| LIMA was used as a graft but is no longer functional  
| Depressed LVEF |

### Uncertain Indications (Median Score 4-6)

#### Patients with Acute Coronary Syndromes

| STEMI with presumed successful treatment with fibrinolysis  
|----------------------------| 5 (U) |
| Asymptomatic; no HF or no recurrent ischemic symptoms, or no unstable ventricular arrhythmias  
| Normal LVEF  
| One vessel coronary artery disease presumed to be the culprit artery |

#### Patients without Prior Bypass Surgery

| CCS Angina Class  
|----------------------------| 1 or II | III or IV |
| Asymptomatic |

| One or two vessel coronary artery disease without involvement of proximal LAD  
|----------------------------| 5 (U) |
| Low-risk findings on non-invasive testing  
| Receiving no or minimal anti-ischemic medical therapy  

<p>| One or two vessel coronary artery disease |
|----------------------------| 5 (U) |</p>
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</thead>
<tbody>
<tr>
<td><strong>without involvement of proximal LAD</strong></td>
<td><strong>Low-risk findings on non-invasive testing</strong></td>
<td><strong>Receiving a course of maximal anti-ischemic medical therapy</strong></td>
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<td><strong>14.</strong></td>
<td>One or two vessel coronary artery disease without involvement of proximal LAD</td>
<td>Intermediate-risk findings on non-invasive testing</td>
<td>Receiving no or minimal anti-ischemic medical therapy</td>
<td>5 (U)</td>
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<td><strong>15.</strong></td>
<td>One or two vessel coronary artery disease without involvement of proximal LAD</td>
<td>Intermediate-risk findings on non-invasive testing</td>
<td>Receiving a course of maximal anti-ischemic medical therapy</td>
<td>4 (U)</td>
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<td><strong>16.</strong></td>
<td>One or two vessel coronary artery disease without involvement of proximal LAD</td>
<td>High-risk findings on non-invasive testing</td>
<td>Receiving no or minimal anti-ischemic medical therapy</td>
<td>6 (U)</td>
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<tr>
<td><strong>18.</strong></td>
<td>One or two vessel coronary artery disease without involvement of proximal LAD</td>
<td>No non-invasive testing performed</td>
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<tr>
<td><strong>20.</strong></td>
<td>One or two vessel coronary artery disease with borderline stenosis “50%-60%”</td>
<td>No non-invasive testing performed or equivocal test results present</td>
<td>FFR less than 0.75 and/or IVUS with significant reduction in cross sectional area</td>
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<td><strong>23.</strong></td>
<td>Chronic total occlusion of one major epicardial coronary artery, without other coronary stenoses</td>
<td>Low-risk findings on non-invasive testing</td>
<td>Receiving a course of maximal anti-ischemic medical therapy</td>
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<td>28.</td>
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### Patients with Prior Bypass Surgery (Without Acute Coronary Syndromes)

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<th>One or more stenoses in saphenous vein graft(s)</th>
<th>Low-risk findings on non-invasive testing including normal LV systolic function</th>
<th>Receiving no or minimal anti-ischemic medical therapy</th>
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<td>54.</td>
<td>One or more lesions in native coronary arteries without bypass grafts</td>
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**Method of Revascularization:**
*Advanced Coronary Disease*, CCS Angina Greater than or Equal to Class III and/or Evidence of Intermediate- to High-Risk Findings on Non-Invasive Testing

<table>
<thead>
<tr>
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| 63. | Three vessel coronary artery disease  
No diabetes and normal LVEF | 6 (U) |  |
| 64. | Three vessel coronary artery disease  
Diabetes | 5 (U) |  |
| 65. | Three vessel coronary artery disease  
Depressed LVEF | 4 (U) |  |
| 72. | Prior bypass surgery with native three-vessel disease and failure of multiple bypass grafts  
LIMA remains patent to a native coronary artery  
Depressed LVEF |  | 6 (U) |
| 73. | Prior bypass surgery with native three-vessel disease and failure of multiple bypass grafts  
LIMA was used as a graft but is no longer functional  
Depressed LVEF |  | 6 (U) |

**Inappropriate Indications (Median Score 1-3)**

**Patients with Acute Coronary Syndromes**

<table>
<thead>
<tr>
<th></th>
<th>PCI Appropriateness Rating</th>
<th>CABG Appropriateness Rating</th>
<th>Appropriateness Score (1-9)</th>
</tr>
</thead>
</table>
| 3. | STEMI  
Greater than 12 hours from symptom onset  
Asymptomatic; no hemodynamic instability and no electrical instability |  | 3 (I) |
7. ▪ STEMI with successful treatment of the culprit artery by primary PCI or fibrinolysis.
▪ Asymptomatic; no HF, no evidence of recurrent or provokable ischemia or no unstable ventricular arrhythmias during index hospitalization
▪ Normal LVEF
▪ Revascularization of a non-infarct related artery during index hospitalization

<table>
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<th>Asymptomatic</th>
<th>I or II</th>
<th>III or IV</th>
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<td><strong>Patients without Prior Bypass Surgery</strong></td>
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<td>12.</td>
<td>One or two vessel coronary artery disease without involvement of proximal LAD</td>
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<td>2 (I)</td>
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<td>2 (I)</td>
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<td>One or two vessel coronary artery disease with borderline stenosis “50%-60%”</td>
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<td>3 (I)</td>
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<td>▪ No non-invasive testing performed</td>
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<td>▪ No further invasive evaluation performed (i.e. FFR, IVUS)</td>
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<td></td>
<td>▪ FFR less than 0.75 and/or IVUS with significant reduction in cross sectional area.</td>
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</tr>
</tbody>
</table>
### Patients with Prior Bypass Surgery (Without Acute Coronary Syndromes)

<table>
<thead>
<tr>
<th>CCS Angina Class</th>
<th>Asymptomatic</th>
<th>I or II</th>
<th>III or IV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appropriateness Score (1-9)</strong></td>
<td>3 (I)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 48. | One or more stenoses in saphenous vein graft(s) | | |
| | Low-risk findings on non-invasive testing including normal LV systolic function | | |
| | Receiving no or minimal anti-ischemic medical therapy | | |
| 54. | One or more lesions in native coronary arteries without bypass grafts | | 3 (I) |
| | | | |
| | All bypass grafts patent and without significant disease | | |
| | Low-risk findings on non-invasive testing including normal LV systolic function | | |
| | Receiving no or minimal anti-ischemic medical therapy | | |
| 55. | One or more lesions in native coronary arteries without bypass grafts | 3 (I) | |
| | All bypass grafts patent and without significant disease | | |
| | Low-risk findings on non-invasive testing including normal LV systolic function | | |
| | Receiving a course of maximal anti-ischemic medical therapy | | |
| 56. | One or more lesions in native coronary arteries without bypass grafts | 3 (I) | |
| | All bypass grafts patent and without significant disease | | |
| | Intermediate-risk findings on non-invasive testing | | |
| | Receiving no or minimal anti-ischemic medical therapy | | |

**Method of Revascularization:**

*Advanced Coronary Disease*, CCS Angina Greater than or Equal to Class III and/or Evidence of Intermediate- to High-Risk Findings on Non-Invasive Testing

<table>
<thead>
<tr>
<th></th>
<th>PCI Appropriateness Rating</th>
<th>CABG Appropriateness Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Appropriateness Score (1-9)</strong></td>
<td></td>
</tr>
<tr>
<td>66.</td>
<td>Isolated left main stenosis</td>
<td>3 (I)</td>
</tr>
<tr>
<td></td>
<td>No diabetes and normal LVEF</td>
<td></td>
</tr>
<tr>
<td>67.</td>
<td>Isolated left main stenosis</td>
<td>3 (I)</td>
</tr>
<tr>
<td></td>
<td>Diabetes</td>
<td></td>
</tr>
<tr>
<td>68.</td>
<td>Isolated left main stenosis</td>
<td>3 (I)</td>
</tr>
<tr>
<td></td>
<td>Depressed LVEF</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Score</td>
</tr>
<tr>
<td>---</td>
<td>------------------------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>69</td>
<td>Left main stenosis and additional coronary artery disease</td>
<td>3 (I)</td>
</tr>
<tr>
<td></td>
<td>No diabetes and normal LVEF</td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>Left main stenosis and additional coronary artery disease</td>
<td>2 (I)</td>
</tr>
<tr>
<td></td>
<td>Diabetes</td>
<td></td>
</tr>
<tr>
<td>71</td>
<td>Left main stenosis and additional coronary artery disease</td>
<td>2 (I)</td>
</tr>
<tr>
<td></td>
<td>Depressed LVEF</td>
<td></td>
</tr>
</tbody>
</table>
# Relevant Literature Search for Revascularization

## Table 1. Patients with Acute Coronary Syndromes

<table>
<thead>
<tr>
<th></th>
<th>Evaluation of Chest Pain Syndrome or Anginal Equivalent</th>
</tr>
</thead>
</table>
| 1. | ▪ STEMI  
▪ Less than or equal to 12 hours from onset of symptoms  
▪ Revascularization of the culprit artery |
| 2. | ▪ STEMI  
▪ Onset of symptoms within the prior 12 to 24 hours  
▪ Severe HF, persistent ischemic symptoms or hemodynamic or electrical instability present |
| 3. | ▪ STEMI  
▪ Greater than 12 hours from symptom onset  
▪ Asymptomatic; no hemodynamic instability and no electrical instability |
| 4. | ▪ STEMI with presumed successful treatment with fibrinolysis  
▪ Evidence of HF, recurrent ischemia, or unstable ventricular arrhythmias present  
▪ One vessel coronary artery disease, presumed to be the culprit artery |
| 5. | ▪ STEMI with presumed successful treatment with fibrinolysis  
▪ Asymptomatic; no HF or no recurrent ischemic symptoms, or no unstable ventricular arrhythmias  
▪ Normal LVEF  
▪ One vessel coronary artery disease presumed to be the culprit artery |
<p>| | | |</p>
<table>
<thead>
<tr>
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</thead>
</table>
| 6. | ▪ STEMI with presumed successful treatment with fibrinolysis  
▪ Asymptomatic; no HF, no recurrent ischemic symptoms, or no unstable ventricular arrhythmias at time of presentation  
▪ Depressed LVEF  
▪ Three vessel coronary artery disease  
▪ Elective/semi-elective revascularization | |
| 7. | ▪ STEMI with successful treatment of the culprit artery by primary PCI or fibrinolysis.  
▪ Asymptomatic; no HF, no evidence of recurrent or provocable ischemia or no unstable ventricular arrhythmias during index hospitalization  
▪ Normal LVEF  
▪ Revascularization of a non-infarct related artery during index hospitalization | |
| 8. | ▪ STEMI or NSTEMI and successful PCI of culprit artery during index hospitalization  
▪ Symptoms of recurrent myocardial ischemia and/or high-risk findings on non-invasive stress testing performed after index hospitalization  
▪ Revascularization of one or more additional coronary arteries | |
| 9. | ▪ UA/NSTEMI and high-risk features for short term risk of death or nonfatal MI  
▪ Revascularization of the presumed culprit artery | |
| 10. | ▪ UA/NSTEMI and high-risk features for short term risk of death or nonfatal MI  
▪ Revascularization of multiple coronary arteries when the culprit artery cannot be clearly determined | |
| 11. | ▪ Patients with acute myocardial infarction (STEMI or NSTEMI)  
▪ Evidence of cardiogenic shock  
▪ Revascularization of one or more coronary arteries | |
High Relevance:


Other Literature:


<table>
<thead>
<tr>
<th></th>
<th>One or two vessel coronary artery disease without involvement of proximal LAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.</td>
<td>▪ Low-risk findings on non-invasive testing</td>
</tr>
<tr>
<td></td>
<td>▪ Receiving no or minimal anti-ischemic medical therapy</td>
</tr>
<tr>
<td>13.</td>
<td>▪ One or two vessel coronary artery disease without involvement of proximal LAD</td>
</tr>
<tr>
<td></td>
<td>▪ Low-risk findings on non-invasive testing</td>
</tr>
<tr>
<td></td>
<td>▪ Receiving a course of maximal anti-ischemic medical therapy</td>
</tr>
<tr>
<td>14.</td>
<td>▪ One or two vessel coronary artery disease without involvement of proximal LAD</td>
</tr>
<tr>
<td></td>
<td>▪ Intermediate-risk findings on non-invasive testing</td>
</tr>
<tr>
<td></td>
<td>▪ Receiving no or minimal anti-ischemic medical therapy</td>
</tr>
<tr>
<td>15.</td>
<td>▪ One or two vessel coronary artery disease without involvement of proximal LAD</td>
</tr>
<tr>
<td></td>
<td>▪ Intermediate-risk findings on non-invasive testing</td>
</tr>
<tr>
<td></td>
<td>▪ Receiving a course of maximal anti-ischemic medical therapy</td>
</tr>
<tr>
<td>16.</td>
<td>▪ One or two vessel coronary artery disease without involvement of proximal LAD</td>
</tr>
<tr>
<td></td>
<td>▪ High-risk findings on non-invasive testing</td>
</tr>
<tr>
<td></td>
<td>▪ Receiving no or minimal anti-ischemic medical therapy</td>
</tr>
<tr>
<td>17.</td>
<td>▪ One or two vessel coronary artery disease without involvement of proximal LAD</td>
</tr>
<tr>
<td></td>
<td>▪ High-risk findings on non-invasive testing</td>
</tr>
<tr>
<td></td>
<td>▪ Receiving a course of maximal anti-ischemic medical therapy</td>
</tr>
<tr>
<td>18.</td>
<td>▪ One or two vessel coronary artery disease without involvement of proximal LAD</td>
</tr>
<tr>
<td></td>
<td>▪ No non-invasive testing performed</td>
</tr>
<tr>
<td></td>
<td><strong>Description</strong></td>
</tr>
<tr>
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<td>-----------------</td>
</tr>
</tbody>
</table>
| 19. | One or two vessel coronary artery disease with borderline stenosis “50%-60%”  
   | No non-invasive testing performed  
   | No further invasive evaluation performed (i.e. FFR, IVUS) |
| 20. | One or two vessel coronary artery disease with borderline stenosis “50%-60%”  
   | No non-invasive testing performed or equivocal test results present  
   | FFR less than 0.75 and/or IVUS with significant reduction in cross sectional area. |
| 21. | One or two vessel coronary artery disease with borderline stenosis “50%-60%”  
   | No non-invasive testing performed or equivocal test results present  
   | FFR or IVUS findings do not meet criteria for significant stenosis |
| 22. | Chronic total occlusion of one major epicardial coronary artery, without other coronary stenoses  
   | Low-risk findings on non-invasive testing  
   | Receiving no or minimal anti-ischemic medical therapy |
| 23. | Chronic total occlusion of one major epicardial coronary artery, without other coronary stenoses  
   | Low-risk findings on non-invasive testing  
   | Receiving a course of maximal anti-ischemic medical therapy |
| 24. | Chronic total occlusion of one major epicardial coronary artery, without other coronary stenoses  
   | Intermediate-risk findings on non-invasive testing  
   | Receiving no or minimal anti-ischemic medical therapy |
| 25. | Chronic total occlusion of one major epicardial coronary artery, without other coronary stenoses  
   | Intermediate-risk criteria on non-invasive testing  
<p>| Receiving a course of maximal anti-ischemic medical therapy |</p>
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
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</table>
| 26. | Chronic total occlusion of one major epicardial coronary artery, without other coronary stenoses  
|    | - High-risk findings on non-invasive testing  
|    | - Receiving no or minimal anti-ischemic medical therapy                      |
| 27. | Chronic total occlusion of one major epicardial coronary artery, without other coronary stenoses  
|    | - High-risk criteria on non-invasive testing  
|    | - Receiving a course of maximal anti-ischemic medical therapy                |
| 28. | One vessel disease involving the proximal LAD  
|    | - Low-risk findings on non-invasive testing  
|    | - Receiving no or minimal anti-ischemic medical therapy                      |
| 29. | One vessel disease involving the proximal LAD  
|    | - Low-risk findings on non-invasive testing  
|    | - Receiving maximal anti-ischemic medical therapy                            |
| 30. | One vessel disease involving the proximal LAD  
|    | - Intermediate-risk findings on non-invasive testing  
|    | - Receiving no or minimal anti-ischemic medical therapy                      |
| 31. | One vessel disease involving the proximal LAD  
|    | - Intermediate-risk findings on non-invasive testing  
|    | - Receiving maximal anti-ischemic medical therapy                            |
| 32. | One vessel disease involving the proximal LAD  
|    | - High-risk findings on non-invasive testing  
<p>|    | - Receiving no or minimal anti-ischemic medical therapy                      |</p>
<table>
<thead>
<tr>
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</table>
| 33. | - One vessel disease involving the proximal LAD  
  - High-risk findings on non-invasive testing  
  - Receiving maximal anti-ischemic medical therapy |
| 34. | - Two vessel disease involving the proximal LAD  
  - Low-risk findings on non-invasive testing  
  - Receiving no or minimal anti-ischemic medical therapy |
| 35. | - Two vessel disease involving the proximal LAD  
  - Low-risk findings on non-invasive testing  
  - Receiving a course of maximal anti-ischemic medical therapy |
| 36. | - Two vessel coronary artery disease involving the proximal LAD  
  - Intermediate-risk findings on non-invasive testing  
  - Receiving no or minimal anti-ischemic medical therapy |
| 37. | - Two vessel coronary artery disease involving the proximal LAD  
  - Intermediate-risk findings on non-invasive testing  
  - Receiving a course of maximal anti-ischemic medical therapy |
| 38. | - Two vessel coronary artery disease involving the proximal LAD  
  - High-risk findings on non-invasive testing  
  - Receiving no or minimal anti-ischemic medical therapy |
| 39. | - Two vessel coronary artery disease involving the proximal LAD  
  - High-risk findings on non-invasive testing  
  - Receiving a course of maximal anti-ischemic medical therapy |
<p>| | |</p>
<table>
<thead>
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</table>
| 40. | Three vessel coronary artery disease (no left main)  
  - Low-risk findings on non-invasive testing including normal LV systolic function  
  - Receiving no or minimal anti-ischemic medical therapy |
| 41. | Three vessel coronary artery disease (no left main)  
  - Low-risk findings on non-invasive testing including normal LV systolic function  
  - Receiving a course of maximal anti-ischemic medical therapy |
| 42. | Three vessel coronary artery disease (no left main)  
  - Intermediate-risk findings on non-invasive testing  
  - Receiving no or minimal anti-ischemic medical therapy |
| 43. | Three vessel coronary artery disease (no left main)  
  - Intermediate risk findings on non-invasive testing  
  - Receiving a course of maximal anti-ischemic medical therapy |
| 44. | Three vessel coronary artery disease (no left main)  
  - High-risk findings on non-invasive testing  
  - Receiving no or minimal anti-ischemic medical therapy |
| 45. | Three vessel coronary artery disease (no left main)  
  - High risk findings on non-invasive testing  
  - Receiving a course of maximal anti-ischemic medical therapy |
| 46. | Three vessel coronary artery disease (no left main)  
  - Abnormal LV systolic function |
| 47. | Left Main Stenosis |
High Relevance:


Other Literature:


<table>
<thead>
<tr>
<th></th>
<th>One or more stenoses in saphenous vein graft(s)</th>
<th>Low-risk findings on non-invasive testing including normal LV systolic function</th>
<th>Receiving no or minimal anti-ischemic medical therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>48.</td>
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<td>49.</td>
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<td>52.</td>
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<tr>
<td>53.</td>
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<tr>
<td></td>
<td>One or more lesions in native coronary arteries without bypass grafts</td>
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<td>---------------------------------------------------------------------</td>
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<tr>
<td>54.</td>
<td>All bypass grafts patent and without significant disease</td>
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<tr>
<td></td>
<td>Low-risk findings on non-invasive testing including normal LV systolic function</td>
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<td>56.</td>
<td>All bypass grafts patent and without significant disease</td>
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<td></td>
<td>Intermediate-risk findings on non-invasive testing</td>
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<td></td>
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<td>59.</td>
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<td></td>
<td>High-risk finding on non-invasive testing</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Receiving a course of maximal anti-ischemic medical therapy</td>
<td></td>
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</tr>
</tbody>
</table>
**High Relevance:**


**Table 4. Method of Revascularization**

*Advanced Coronary Disease*, CCS Angina Greater than or equal to Class III and/or evidence of intermediate to high risk findings on non-invasive testing

<table>
<thead>
<tr>
<th></th>
<th>Two vessel coronary artery disease with proximal LAD stenosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>60.</td>
<td>No diabetes and normal LVEF</td>
</tr>
<tr>
<td>61.</td>
<td>Two vessel coronary artery disease with proximal LAD stenosis</td>
</tr>
<tr>
<td>62.</td>
<td>Diabetes</td>
</tr>
<tr>
<td>63.</td>
<td>Two vessel coronary artery disease with proximal LAD stenosis</td>
</tr>
<tr>
<td>64.</td>
<td>Three vessel coronary artery disease</td>
</tr>
<tr>
<td>65.</td>
<td>Diabetes</td>
</tr>
<tr>
<td>66.</td>
<td>Three vessel coronary artery disease</td>
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<tr>
<td>67.</td>
<td>No diabetes and normal LVEF</td>
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<tr>
<td>68.</td>
<td>Diabetes</td>
</tr>
<tr>
<td>69.</td>
<td>Three vessel coronary artery disease</td>
</tr>
<tr>
<td>70.</td>
<td>No diabetes and normal LVEF</td>
</tr>
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<td>71.</td>
<td>Diabetes</td>
</tr>
<tr>
<td>72.</td>
<td>Three vessel coronary artery disease</td>
</tr>
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<td>73.</td>
<td>No diabetes and normal LVEF</td>
</tr>
<tr>
<td>74.</td>
<td>Diabetes</td>
</tr>
<tr>
<td>75.</td>
<td>Three vessel coronary artery disease</td>
</tr>
<tr>
<td>76.</td>
<td>No diabetes and normal LVEF</td>
</tr>
<tr>
<td>77.</td>
<td>Diabetes</td>
</tr>
</tbody>
</table>
| 65. | Three vessel coronary artery disease  
|     | Depressed LVEF |
| 66. | Isolated left main stenosis  
|     | No diabetes and normal LVEF |
| 67. | Isolated left main stenosis  
|     | Diabetes |
| 68. | Isolated left main stenosis  
|     | Depressed LVEF |
| 69. | Left main stenosis and additional coronary artery disease  
|     | No diabetes and normal LVEF |
| 70. | Left main stenosis and additional coronary artery disease  
|     | Diabetes |
| 71. | Left main stenosis and additional coronary artery disease  
|     | Depressed LVEF |
| 72. | Prior bypass surgery with native three-vessel disease and failure of multiple bypass grafts  
|     | LIMA remains patent to a native coronary artery  
|     | Depressed LVEF |
| 73. | Prior bypass surgery with native three-vessel disease and failure of multiple bypass grafts  
|     | LIMA was used as a graft but is no longer functional  
|     | Depressed LVEF |
High Relevance:


SOS Investigators, Coronary artery bypass surgery versus percutaneous coronary intervention with stent implantation in patients with multivessel coronary artery disease (the Stent or Surgery trial): a randomised controlled trial. Lancet. 2002 Sep 28;360(9338):965-70

Soares PR, Hueb WA, Lemos PA, Lopes N, Martinez EE, Cesar LA, Oliveira SA, Ramires JA. Coronary revascularization (surgical or percutaneous) decreases mortality after the first year in diabetic subjects but not in nondiabetic subjects with multivessel disease: an analysis from the Medicine, Angioplasty, or Surgery Study (MASS II). Circulation. 2006 Jul 4;114(1 Suppl):I420-4. PMID: 16820611 [PubMed - indexed for MEDLINE]


<table>
<thead>
<tr>
<th>Indication</th>
<th>Guideline Recommendations</th>
</tr>
</thead>
</table>
| STEMI      | Less than or equal to 12 hours from onset of symptoms  
            | Revascularization of the culprit artery |

**STEMI (p. e24)**  
**Prehospital Destination Protocols**  
**Class I**  
Patients with STEMI who have contraindications to fibrinolytic therapy should be brought immediately or secondarily transferred promptly (i.e., primary receiving hospital door-to-departure time less than 30 minutes) to facilities capable of cardiac catheterization and rapid revascularization (PCI or CABG). *(Level of Evidence B)*

**STEMI (p. e129)**  
**Coronary Artery Bypass Graft Surgery for Recurrent Ischemia After STEMI**  
**Class I**  
Urgent CABG is indicated if the coronary angiogram reveals anatomy that is unsuitable for PCI. *(Level of Evidence: B)*

** PCI (p. e43)**  
**Patients With STEMI: General and Specific Considerations**  
**Class I**  
If immediately available, primary PCI should be performed in patients with STEMI (including true posterior MI) or MI with new or presumably new left bundle-branch block who can undergo PCI of the infarct artery within 12 hours of symptom onset, if performed in a timely fashion (balloon inflation goal within 90 minutes of presentation) by persons skilled in the procedure (individuals who perform more than 75 PCI procedures per year, ideally at least 11 PCIs per year for STEMI). The procedure should be supported by experienced personnel in an appropriate laboratory environment (one that performs more than 200 PCI procedures per year, of which at least 36 are primary PCI for STEMI, and that has cardiac surgery capability). *(Level of Evidence: A)* Primary PCI should be performed as quickly as possible, with a goal of a medical contact-to-balloon or door-to-balloon time within 90 minutes. *(Level of Evidence: B)*

** PCI (p. e49)**  
**PCI in Fibrinolytic-Ineligible Patients**  
**Class I**  
Primary PCI should be performed in fibrinolytic-ineligible patients who present with STEMI within 12 hours of symptom onset. *(Level of Evidence C)*

** CABG (P. e281)**  
**ST-Segment Elevation MI (STEMI)**  
CABG may be performed as primary reperfusion in patients who have suitable anatomy and who are not candidates for or who have had failed fibrinolysis/PCI and who are in the early hours (6 to 12 hours) of evolving STEMI. *(Level of Evidence: B)*
2. **STEMI**
   - Onset of symptoms within the prior 12 to 24 hours
   - Severe HF, persistent ischemic symptoms or hemodynamic or electrical instability present

**STEMI (p. e129)**
Coronary Artery Bypass Graft Surgery for Recurrent Ischemia After STEMI
Class I
Urgent CABG is indicated if the coronary angiogram reveals anatomy that is unsuitable for PCI. *(Level of Evidence: B)*

**CABG (p. e281)**
ST-Segment Elevation MI (STEMI)
Class I
Emergency or urgent CABG in patients with STEMI should be undertaken in the following circumstances:
   a. Persistent or recurrent ischemia refractory to medical therapy in patients who have coronary anatomy suitable for surgery, who have a significant area of myocardium at risk, and who are not candidates for PCI. *(Level of Evidence: B)*
   b. Cardiogenic shock in patients less than 75 years old with ST-segment elevation or left bundle bundle-branch block or posterior MI who develop shock within 36 hours of MI and are suitable for revascularization that can be performed within 18 hours of shock, unless further support is futile because of patient’s wishes or contraindications/ unsuitability for further invasive care *(Level of Evidence: A)*

**PCI (p. e43)**
Patients With STEMI: General and Specific Considerations
Class I
Primary PCI should be performed for patients less than 75 years old with ST elevation or presumably new left bundle-branch block who develop shock within 36 hours of MI and are suitable for revascularization that can be performed within 18 hours of shock, unless further support is futile because of the patient’s wishes or contraindications/unsuitability for further invasive care. *(Level of Evidence: A)*

3. **STEMI**
   - Greater than 12 hours from symptom onset
   - Asymptomatic; no hemodynamic instability and no electrical instability

**PCI (p. e43)**
Patients With STEMI: General and Specific Considerations
Class III
Primary PCI should not be performed in asymptomatic patients more than 12 hours after onset of STEMI who are hemodynamically and electrically stable. *(Level of Evidence: C)*

**CABG (p. e281)**
Class III
- Emergency CABG should not be performed in patients with persistent angina and a small area of myocardium at risk who are hemodynamically stable. *(Level of Evidence: C)*
- Emergency CABG should not be performed in patients with successful epicardial reperfusion but unsuccessful microvascular reperfusion. *(Level of Evidence: C)*
4. STEMI with presumed successful treatment with fibrinolysis
   - Evidence of HF, recurrent ischemia, or unstable ventricular arrhythmias present
   - One vessel coronary artery disease, presumed to be the culprit artery

**STEMI (p. e63)**

**Rescue PCI**

Class I
- Rescue PCI should be performed in patients less than 75 years old with ST elevation or LBBB who develop shock within 36 hours of MI and are suitable for revascularization that can be performed within 18 hours of shock unless further support is futile because of the patient's wishes or contraindications/unsuitability for further invasive care. *(Level of Evidence: B)*
- Rescue PCI should be performed in patients with severe CHF and/or pulmonary edema (Killip class 3) and onset of symptoms within 12 hours. *(Level of Evidence: B)*

**STEMI (p. e65)**

**Percutaneous Coronary Intervention After Fibrinolysis**

Class I
- In patients whose anatomy is suitable, PCI should be performed for moderate or severe spontaneous or provokable myocardial ischemia during recovery from STEMI. *(Level of Evidence: B)*

Class IIa
- It is reasonable to perform routine PCI in patients with LVEF less than or equal to 0.40, CHF, or serious ventricular arrhythmias. *(Level of Evidence: C)*

**STEMI (p. e124-e125)**

**Recurrent Ischemia/Infarction**

Class I
- In addition to escalation of medical therapy, patients with recurrent ischemic-type chest discomfort and signs of hemodynamic instability, poor LV function, or a large area of myocardium at risk should be referred urgently for cardiac catheterization and undergo revascularization as needed. Insertion of an IABP should also be considered. *(Level of Evidence: C)*
- Patients with recurrent ischemic-type chest discomfort who are considered candidates for revascularization should undergo coronary arteriography and PCI or CABG as dictated by coronary anatomy. *(Level of Evidence: B)*

**PCI (p. e53)**

**PCI After Successful Fibrinolysis or for Patients Not Undergoing Primary Reperfusion**

Class I
- In patients whose anatomy is suitable, PCI should be performed when there is objective evidence of recurrent MI. *(Level of Evidence: C)*
- In patients whose anatomy is suitable, PCI should be performed for moderate or severe spontaneous or provokable myocardial ischemia during recovery from STEMI. *(Level of Evidence: B)*
- In patients whose anatomy is suitable, PCI should be performed for cardiogenic shock or hemodynamic instability. *(Level of Evidence: B)*

Class IIa
- It is reasonable to perform routine PCI in patients with LV ejection fraction less than or equal to 0.40, HF, or serious ventricular arrhythmias. *(Level of Evidence: C)*
- It is reasonable to perform PCI when there is documented clinical heart failure during the acute episode, even though subsequent evaluation shows preserved LV function (LV ejection fraction greater than 0.40). *(Level of Evidence: C)*

Class IIb
- PCI might be considered as part of an invasive strategy after fibrinolytic therapy. *(Level of Evidence: C)*

**CABG (p. e281)**

**ST-Segment Elevation MI (STEMI)**

Class I
- Emergency or urgent CABG in patients with STEMI should be undertaken in the following circumstances:
  a. Failed angioplasty with persistent pain or hemodynamic instability in patients with coronary anatomy suitable for surgery. *(Level of Evidence: B)*
  b. Persistent or recurrent ischemia refractory to medical therapy in patients who have coronary anatomy suitable for
surgery, who have a significant area of myocardium at risk, and who are not candidates for PCI. *(Level of Evidence: B)*

c. At the time of surgical repair of postinfarction ventricular septal rupture or mitral valve insufficiency. *(Level of Evidence: B)*

d. Cardiogenic shock in patients less than 75 years old with ST-segment elevation or left bundle branch block or posterior MI who develop shock within 36 hours of MI and are suitable for revascularization that can be performed within 18 hours of shock, unless further support is futile because of patient’s wishes or contraindications/unsuitability for further invasive care *(Level of Evidence: A)*

e. Life-threatening ventricular arrhythmias in the presence of greater than or equal to 50% left main stenosis and/or triple-vessel disease *(Level of Evidence: B)*

**Class IIa**

- CABG may be performed as primary reperfusion in patients who have suitable anatomy and who are not candidates for or who have had failed fibrinolysis/PCI and who are in the early hours (6 to 12 hours) of evolving STEMI. *(Level of Evidence: B)*

- In patients who have had an STEMI or NSTEMI, CABG mortality is elevated for the first 3 to 7 days after infarction, and the benefit of revascularization must be balanced against this increased risk. Beyond 7 days after infarction, the criteria for revascularization described in previous sections are applicable. *(Level of Evidence: B)*

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5. ▪ STEMI with presumed successful treatment with fibrinolysis  
   ▪ Asymptomatic; no HF or no recurrent ischemic symptoms, or no unstable ventricular arrhythmias  
   ▪ Normal LVEF  
   ▪ One vessel coronary artery disease presumed to be the culprit artery

**STEMI (p. e65)**

**Percutaneous Coronary Intervention After Fibrinolysis**

**Class IIb**

Routine PCI might be considered as part of an invasive strategy after fibrinolytic therapy. *(Level of Evidence: B)*

**PCI (p. e53)**

**PCI After Successful Fibrinolysis or for Patients Not Undergoing Primary Reperfusion**

**Class IIb**

PCI might be considered as part of an invasive strategy after fibrinolytic therapy. *(Level of Evidence: C)*
6. **STEMI with presumed successful treatment with fibrinolysis**
   - Asymptomatic; no HF, no recurrent ischemic symptoms, or no unstable ventricular arrhythmias at time of presentation
   - Depressed LVEF
   - Three vessel coronary artery disease
   - Elective/semi-elective revascularization

**STEMI (p. e65)**
Percutaneous Coronary Intervention After Fibrinolysis
Class IIa
It is reasonable to perform routine PCI in patients with LVEF less than or equal to 0.40, CHF, or serious ventricular arrhythmias. *(Level of Evidence: C)*

**PCI (p. e53)**
PCI After Successful Fibrinolysis or for Patients Not Undergoing Primary Reperfusion
Class IIa
It is reasonable to perform routine PCI in patients with LV ejection fraction less than or equal to 0.40, HF, or serious ventricular arrhythmias. *(Level of Evidence: C)*

**CABG (p. e281)**
ST-Segment Elevation MI (STEMI)
Class IIa
In patients who have had an STEMI or NSTEMI, CABG mortality is elevated for the first 3 to 7 days after infarction, and the benefit of revascularization must be balanced against this increased risk. Beyond 7 days after infarction, the criteria for revascularization described in previous sections are applicable. *(Level of Evidence: B)*

7. **STEMI with successful treatment of the culprit artery by primary PCI or fibrinolysis.**
   - Asymptomatic; no HF, no evidence of recurrent or provokable ischemia or no unstable ventricular arrhythmias during index hospitalization
   - Normal LVEF
   - Revascularization of a non-infarct related artery during index hospitalization

**STEMI (p. e56)**
Primary PCI
Class III
PCI should not be performed in a noninfarct artery at the time of primary PCI in patients without hemodynamic compromise. *(Level of Evidence: C)*

**STEMI (p. e65)**
Percutaneous Coronary Intervention After Fibrinolysis
Class IIb
Routine PCI might be considered as part of an invasive strategy after fibrinolytic therapy. *(Level of Evidence: B)*

**PCI (p. e43)**
Patients With STEMI – General and Specific Conditions
Class III
Elective PCI should not be performed in a noninfarct-related artery at the time of primary PCI of the infarct related artery in patients without hemodynamic compromise. *(Level of Evidence: C)*

**CABG (p. e281)**
ST-Segment Elevation MI (STEMI)
Class IIa
In patients who have had an STEMI or NSTEMI, CABG mortality is elevated for the first 3 to 7 days after infarction, and the benefit of revascularization must be balanced against this increased risk. Beyond 7 days after infarction, the criteria for revascularization described in previous sections are applicable. *(Level of Evidence: B)*
Class III
Emergency CABG should not be performed in patients with successful epicardial reperfusion but unsuccessful microvascular reperfusion. (Level of Evidence: C)

8. ▪ STEMI or NSTEMI and successful PCI of culprit artery during index hospitalization
▪ Symptoms of recurrent myocardial ischemia and/or high-risk findings on non-invasive stress testing performed after index hospitalization
▪ Revascularization of one or more additional coronary arteries

**STEMI (p. e130)**
Elective CABG After STEMI in Patients With Angina
Class I
Coronary artery bypass graft surgery is beneficial for patients with stable angina who have 1- or 2-vessel coronary disease without significant proximal LAD stenosis but with a large area of viable myocardium and high-risk criteria on noninvasive testing. (Level of Evidence: B)

**PCI (p.e41)**
Patients With CCS Class III Angina
Class Ila
▪ It is reasonable that PCI be performed in patients with CCS class III angina and single-vessel or multivessel CAD who are undergoing medical therapy and who have 1 or more significant lesions in 1 or more coronary arteries suitable for PCI with a high likelihood of success and low risk of morbidity or mortality. (Level of Evidence: B)
▪ It is reasonable that PCI be performed in patients with CCS class III angina with single-vessel or multivessel CAD who are undergoing medical therapy with focal saphenous vein graft lesions or multiple stenoses who are poor candidates for reoperative surgery. (Level of Evidence: C)
▪ Use of PCI is reasonable in patients with CCS class III angina with significant left main CAD (greater than 50% diameter stenosis) who are candidates for revascularization but are not eligible for CABG. (Level of Evidence: B)

Class IIb
▪ PCI may be considered in patients with CCS class III angina with single-vessel or multivessel CAD who are undergoing medical therapy and who have 1 or more lesions to be dilated with a reduced likelihood of success. (Level of Evidence: B)
▪ PCI may be considered in patients with CCS class III angina and no evidence of ischemia on noninvasive testing or who are undergoing medical therapy and have 2- or 3-vessel CAD with significant proximal LAD CAD and treated diabetes or abnormal LV function. (Level of Evidence: B)

**CABG (p. e281)**
ST-Segment Elevation MI (STEMI)
Class Ila
In patients who have had an STEMI or NSTEMI, CABG mortality is elevated for the first 3 to 7 days after infarction, and the benefit of revascularization must be balanced against this increased risk. Beyond 7 days after infarction, the criteria for revascularization described in previous sections are applicable. (Level of Evidence: B)

Class III
▪ Emergency CABG should not be performed in patients with persistent angina and a small area of myocardium at risk who are hemodynamically stable. (Level of Evidence: C)
▪ Emergency CABG should not be performed in patients with successful epicardial reperfusion but unsuccessful microvascular reperfusion. (Level of Evidence: C)
9. **UA/NSTEMI and high-risk features for short term risk of death or nonfatal MI**

- Revascularization of the presumed culprit artery

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**UA/NSTEMI (p. e83)**

**Recommendations for PCI**

**Class I**
- An early invasive PCI strategy is indicated for patients with UA/NSTEMI who have no serious comorbidity and who have coronary lesions amenable to PCI and any of the high-risk features listed in Section 3.3. (See Section 3.3 for specific recommendations and their Level of Evidence.)
- Percutaneous coronary intervention (or CABG) is recommended for UA/NSTEMI patients with 1- or 2-vessel CAD with or without significant proximal left anterior descending CAD but with a large area of viable myocardium and high-risk criteria on noninvasive testing. (Level of Evidence: B)
- Percutaneous coronary intervention (or CABG) is recommended for UA/NSTEMI patients with multivessel coronary disease with suitable coronary anatomy, with normal LV function, and without diabetes mellitus. (Level of Evidence: A)

**Class IIa**
- Percutaneous coronary intervention (or CABG) is reasonable for UA/NSTEMI patients with 1- or 2-vessel CAD with or without significant proximal left anterior descending CAD but with a moderate area of viable myocardium and ischemia on noninvasive testing. (Level of Evidence: B)
- Percutaneous coronary intervention (or CABG) can be beneficial compared with medical therapy for UA/NSTEMI patients with 1-vessel disease with significant proximal left anterior descending CAD. (Level of Evidence: B)
- Use of PCI is reasonable in patients with UA/NSTEMI with significant left main CAD (greater than 50% diameter stenosis) who are candidates for revascularization but are not eligible for CABG or who require emergent intervention at angiography for hemodynamic instability. (Level of Evidence: B)

**Recommendations for CABG**

**Class I**
- Coronary artery bypass graft surgery is recommended for UA/NSTEMI patients with significant left main CAD (greater than 50% stenosis). (Level of Evidence: A)
- Coronary artery bypass graft surgery is recommended for UA/NSTEMI patients with 3-vessel disease; the survival benefit is greater in patients with abnormal LV function (LVEF less than 0.50). (Level of Evidence: A)
- Coronary artery bypass graft surgery is recommended for UA/NSTEMI patients with 2-vessel disease with significant proximal left anterior descending CAD and either abnormal LV function (LVEF less than 0.50) or ischemia on noninvasive testing. (Level of Evidence: A)
- Coronary artery bypass graft surgery is recommended for UA/NSTEMI patients in whom percutaneous revascularization is not optimal or possible and who have ongoing ischemia not responsive to maximal nonsurgical therapy. (Level of Evidence: B)
- Coronary artery bypass graft surgery (or PCI) is recommended for UA/NSTEMI patients with 1- or 2-vessel CAD with or without significant proximal left anterior descending CAD but with a large area of viable myocardium and high-risk criteria on noninvasive testing. (Level of Evidence: B)
- Coronary artery bypass graft surgery (or PCI) is recommended for UA/NSTEMI patients with multivessel coronary disease with suitable coronary anatomy, with normal LV function, and without diabetes mellitus. (Level of Evidence: A)

**Class IIa**
- For patients with UA/NSTEMI and multivessel disease, CABG with use of the internal mammary arteries can be beneficial over PCI in patients being treated for diabetes. (Level of Evidence: B)
- It is reasonable to perform CABG with the internal mammary artery for UA/NSTEMI patients with multivessel disease and treated diabetes mellitus. (Level of Evidence: B)
- Coronary artery bypass graft surgery (or PCI) is reasonable for UA/NSTEMI patients with 1- or 2-vessel CAD with or without significant proximal left anterior descending CAD but with a moderate area of viable myocardium and ischemia on noninvasive testing. (Level of Evidence: B)
- Coronary artery bypass graft surgery (or PCI) can be beneficial compared with medical therapy for UA/NSTEMI patients with 1-vessel disease with significant proximal left anterior descending CAD. (Level of Evidence: B)
- Coronary artery bypass surgery (or PCI with stenting) is reasonable for patients with multivessel disease and symptomatic myocardial ischemia. (Level of Evidence: B)

**Class IIb**
- Percutaneous coronary intervention may be considered for UA/NSTEMI patients who are undergoing medical therapy who
have 2-or 3-vessel disease, significant proximal left anterior descending CAD, and treated diabetes or abnormal LV function, with anatomy suitable for catheter-based therapy. (Level of Evidence: B)

**PCI (p. e41-42)**

**Patients With UA/NSTEMI**

**Class I**

An early invasive PCI strategy is indicated for patients with UA/NSTEMI who have no serious co-morbidity and coronary lesions amenable to PCI. Patients must have any of the following high-risk features:

a. Recurrent ischemia despite intensive anti-ischemic therapy. (Level of Evidence: A)
b. Elevated troponin level. (Level of Evidence: A)
c. New ST-segment depression. (Level of Evidence: A)
d. HF symptoms or new or worsening MR. (Level of Evidence: A)
e. Depressed LV systolic function. (Level of Evidence: A)
f. Hemodynamic instability. (Level of Evidence: A)
g. Sustained ventricular tachycardia. (Level of Evidence: A)
h. PCI within 6 months. (Level of Evidence: A)
i. Prior CABG. (Level of Evidence: A)

**Class IIa**

Use of PCI is reasonable in patients with UA/NSTEMI with significant left main CAD (greater than 50% diameter stenosis) who are candidates for revascularization but are not eligible for CABG. (Level of Evidence: B)

**Class IIb**

PCI may be considered in patients with UA/NSTEMI who are undergoing medical therapy who have 2- or 3-vessel disease, significant proximal LAD CAD, and treated diabetes or abnormal LV function. (Level of Evidence: B)

**CABG (p. e280-181)**

**Unstable Angina/Non–ST-Segment Elevation MI (NSTEMI)**

**Class I**

- CABG should be performed for patients with unstable angina/NSTEMI with significant left main coronary artery stenosis. (Level of Evidence: A)
- CABG should be performed for patients with unstable angina/NSTEMI who have left main equivalent: significant (greater than or equal to 70%) stenosis of the proximal LAD and proximal left circumflex artery. (Level of Evidence: A)

**Class IIa**

CABG is probably indicated for patients with unstable angina/NSTEMI who have proximal LAD stenosis with 1- or 2-vessel disease. (Level of Evidence: A)
10. ▪ UA/NSTEMI and high-risk features for short term risk of death or nonfatal MI
▪ Revascularization of multiple coronary arteries when the culprit artery cannot be clearly determined

<table>
<thead>
<tr>
<th><strong>UA/NSTEMI</strong> (p. e83)</th>
<th><strong>Recommendations for PCI</strong></th>
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<tbody>
<tr>
<td><strong>Class I</strong></td>
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<td>▪ Percutaneous coronary intervention (or CABG) is recommended for UA/NSTEMI patients with 1- or 2-vessel CAD with or without significant proximal left anterior descending CAD but with a large area of viable myocardium and high-risk criteria on noninvasive testing. (Level of Evidence: B)</td>
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<td>▪ Percutaneous coronary intervention (or CABG) is recommended for UA/NSTEMI patients with multivessel coronary disease with suitable coronary anatomy, with normal LV function, and without diabetes mellitus. (Level of Evidence: A)</td>
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| **Class Ila**          |                              |
| ▪ Percutaneous coronary intervention (or CABG) is reasonable for UA/NSTEMI patients with 1- or 2-vessel CAD with or without significant proximal left anterior descending CAD but with a moderate area of viable myocardium and ischemia on noninvasive testing. (Level of Evidence: B) |
| ▪ Percutaneous coronary intervention (or CABG) can be beneficial compared with medical therapy for UA/NSTEMI patients with 1-vessel disease with significant proximal left anterior descending CAD. (Level of Evidence: B) |
| ▪ Use of PCI is reasonable in patients with UA/NSTEMI with significant left main CAD (greater than 50% diameter stenosis) who are candidates for revascularization but are not eligible for CABG or who require emergent intervention at angiography for hemodynamic instability. (Level of Evidence: B) |

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<th><strong>Recommendations for CABG</strong></th>
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<td>▪ Coronary artery bypass graft surgery is recommended for UA/NSTEMI patients with significant left main CAD (greater than 50% stenosis). (Level of Evidence: A)</td>
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<td>▪ Coronary artery bypass graft surgery is recommended for UA/NSTEMI patients with 3-vessel disease; the survival benefit is greater in patients with abnormal LV function (LVEF less than 0.50). (Level of Evidence: A)</td>
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<td>▪ Coronary artery bypass graft surgery is recommended for UA/NSTEMI patients with 2-vessel disease with significant proximal left anterior descending CAD and either abnormal LV function (LVEF less than 0.50) or ischemia on noninvasive testing. (Level of Evidence: A)</td>
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<td>▪ Coronary artery bypass graft surgery is recommended for UA/NSTEMI patients in whom percutaneous revascularization is not optimal or possible and who have ongoing ischemia not responsive to maximal nonsurgical therapy. (Level of Evidence: B)</td>
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<td>▪ Coronary artery bypass graft surgery (or PCI) is recommended for UA/NSTEMI patients with 1- or 2-vessel CAD with or without significant proximal left anterior descending CAD but with a large area of viable myocardium and high-risk criteria on noninvasive testing. (Level of Evidence: B)</td>
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<td>▪ Coronary artery bypass graft surgery (or PCI) is recommended for UA/NSTEMI patients with multivessel coronary disease with suitable coronary anatomy, with normal LV function, and without diabetes mellitus. (Level of Evidence: A)</td>
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<td>For patients with UA/NSTEMI and multivessel disease, CABG with use of the internal mammary arteries can be beneficial over PCI in patients being treated for diabetes. (Level of Evidence: B)</td>
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<td>Coronary artery bypass graft surgery (or PCI) is reasonable for UA/NSTEMI patients with 1- or 2-vessel CAD with or without significant proximal left anterior descending CAD but with a moderate area of viable myocardium and ischemia on noninvasive testing. (Level of Evidence: B)</td>
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<td>Coronary artery bypass graft surgery (or PCI) can be beneficial compared with medical therapy for UA/NSTEMI patients with 1-vessel disease with significant proximal left anterior descending CAD. (Level of Evidence: B)</td>
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<tr>
<th><strong>Class IIb</strong></th>
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<tbody>
<tr>
<td>Percutaneous coronary intervention may be considered for UA/NSTEMI patients who are undergoing medical therapy who...</td>
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</table>
have 2- or 3-vessel disease, significant proximal left anterior descending CAD, and treated diabetes or abnormal LV function, with anatomy suitable for catheter-based therapy. *(Level of Evidence: B)*

**PCI (p. e42)**

**Patients With UA/NSTEMI**

**Class IIb**

PCI may be considered in patients with UA/NSTEMI who are undergoing medical therapy who have 2- or 3-vessel disease, significant proximal LAD CAD, and treated diabetes or abnormal LV function. *(Level of Evidence: B)*

**CABG (p. e280-181)**

**Unstable Angina/Non–ST-Segment Elevation MI (NSTEMI)**

**Class I**

CABG should be performed for patients with unstable angina/NSTEMI with significant left main coronary artery stenosis. *(Level of Evidence: A)*

CABG should be performed for patients with unstable angina/NSTEMI who have left main equivalent: significant (greater than or equal to 70%) stenosis of the proximal LAD and proximal left circumflex artery. *(Level of Evidence: A)*

**Class IIa**

CABG is probably indicated for patients with unstable angina/NSTEMI who have proximal LAD stenosis with 1- or 2-vessel disease. *(Level of Evidence: A)*
11. - Patients with acute myocardial infarction (STEMI or NSTEMI)
   - Evidence of cardiogenic shock
   - Revascularization of one or more coronary arteries

<table>
<thead>
<tr>
<th>STEMI (p. e64)</th>
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<tbody>
<tr>
<td>PCI for Cardiogenic Shock</td>
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<tr>
<td><strong>Class I</strong></td>
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<tr>
<td>Primary PCI is recommended for patients less than 75 years old with ST elevation or LBBB who develop shock within 36 hours of MI and are suitable for revascularization that can be performed within 18 hours of shock unless further support is futile because of the patient’s wishes or contraindications/unsuitability for further invasive care. <strong>(Level of Evidence: A)</strong></td>
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<th>STEMI (p. e66)</th>
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<tbody>
<tr>
<td>Acute Surgical Reperfusion</td>
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<tr>
<td><strong>Class I</strong></td>
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<tr>
<td>Emergency or urgent CABG in patients with STEMI should be undertaken in the following circumstances: Cardiogenic shock in patients less than 75 years old with ST elevation or left bundle branch block or posterior MI who develop shock within 36 hours of STEMI, have severe multi-vessel or left main disease, and are suitable for revascularization that can be performed within 18 hours of shock, unless further support is futile because of the patient’s wishes or contraindications/unsuitability for further invasive care. <strong>(Level of Evidence: A)</strong></td>
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<th>STEMI (p. e98)</th>
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<tr>
<td>Cardiogenic Shock</td>
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<td><strong>Class I</strong></td>
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<tr>
<td>Early revascularization, either PCI or CABG, is recommended for patients less than 75 years old with ST elevation or LBBB who develop shock within 36 hours of MI and who are suitable for revascularization that can be performed within 18 hours of shock unless further support is futile because of the patient’s wishes or contraindications/unsuitability for further invasive care. <strong>(Level of Evidence: A)</strong></td>
</tr>
</tbody>
</table>

| Class IIa                           |
| Early revascularization, either PCI or CABG, is reasonable for selected patients 75 years or older with ST elevation or LBBB who develop shock within 36 hours of MI and who are suitable for revascularization that can be performed within 18 hours of shock. Patients with good prior functional status who agree to invasive care may be selected for such an invasive strategy. **(Level of Evidence: B)** |

| PCI (p. e54)                        |
| PCI for Cardiogenic Shock           |
| **Class I**                         |
| Primary PCI is recommended for patients less than 75 years old with ST elevation or left bundle-branch block who develop shock within 36 hours of MI and are suitable for revascularization that can be performed within 18 hours of shock, unless further support is futile because of the patient's wishes or contraindications/unsuitability for further invasive care. **(Level of Evidence: A)** |

| CABG (p. e281)                      |
| ST-Segment Elevation MI (STEMI)     |
| **Class I**                         |
| Cardiogenic shock in patients less than 75 years old with ST-segment elevation or left bundle branch block or posterior MI who develop shock within 36 hours of MI and are suitable for revascularization that can be performed within 18 hours of shock, unless further support is futile because of patient’s wishes or contraindications/unsuitability for further invasive care **(Level of Evidence: A)** |
Table 2. Patients without Prior Bypass Surgery

12. ▪ One or two vessel coronary artery disease without involvement of proximal LAD
 ▪ Low-risk findings on non-invasive testing
 ▪ Receiving no or minimal anti-ischemic medical therapy

_Chronic Stable Angina (p. 77-78)_
Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina
Class III
Use of PCI or CABG for patients with one- or two vessel CAD without significant proximal LAD CAD, who have mild symptoms that are unlikely due to myocardial ischemia, or who have not received an adequate trial of medical therapy and
   a. have only a small area of viable myocardium or
   b. have no demonstrable ischemia on noninvasive testing. (Level of Evidence: C)

_Chronic Stable Angina (p. 90-91)_
Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients
Class III
▪ Use of PCI or CABG for patients with one- or two-vessel CAD without significant proximal LAD CAD and
   a. only a small area of viable myocardium or
   b. no demonstrable ischemia on noninvasive testing. (Level of Evidence: C)
▪ Use of PCI or CABG for patients with borderline coronary stenoses (50% to 60% diameter in locations other than the left main coronary artery) and no demonstrable ischemia on noninvasive testing. (Level of Evidence: C)

_CABG (p. e279)_
Asymptomatic or Mild Angina
Class IIb
CABG may be considered for patients with asymptomatic or mild angina who have 1- or 2-vessel disease not involving the proximal LAD. (If a large area of viable myocardium and high-risk criteria are met on noninvasive testing, this recommendation becomes (Class I). (Level of Evidence: B)

_CABG (p. e280)_
Stable Angina
Class III
CABG is not recommended for patients with stable angina who have 1- or 2-vessel disease not involving significant proximal LAD stenosis, patients who have mild symptoms that are unlikely due to myocardial ischemia, or patients who have not received an adequate trial of medical therapy and
   a. have only a small area of viable myocardium or (Level of Evidence: B)
   b. have no demonstrable ischemia on noninvasive testing. (Level of Evidence: B)

_PCI (p. e40)_
Patients With Asymptomatic Ischemia or CCS Class I or II Angina
Class III
PCI is not recommended in patients with asymptomatic ischemia or CCS class I or II angina who do not meet the criteria as listed under the class II recommendations or who have 1 or more of the following:
   a. Only a small area of viable myocardium at risk
   b. No objective evidence of ischemia.
   c. Lesions that have a low likelihood of successful dilatation.
   d. Mild symptoms that are unlikely to be due to myocardial ischemia.
   e. Factors associated with increased risk of morbidity or mortality.
   f. Left main disease and eligibility for CABG.
   g. Insignificant disease (less than 50% coronary stenosis). (Level of Evidence: C)
13.  
- One or two vessel coronary artery disease without involvement of proximal LAD
- Low-risk findings on non-invasive testing
- Receiving a course of maximal anti-ischemic medical therapy

**Chronic Stable Angina (p. 77-78)**

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class I**

Coronary artery bypass grafting for patients with one- or two-vessel CAD without significant proximal LAD CAD who have survived sudden cardiac death or sustained ventricular tachycardia. *(Level of Evidence: C)*

**Class III**

Use of PCI or CABG for patients with one- or two vessel CAD without significant proximal LAD CAD, who have mild symptoms that are unlikely due to myocardial ischemia, or who have not received an adequate trial of medical therapy and

- c. have only a small area of viable myocardium or
- d. have no demonstrable ischemia on noninvasive testing. *(Level of Evidence: C)*

**Chronic Stable Angina (p. 90-91)**

**Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients**

**Class III**

- Use of PCI or CABG for patients with one- or two-vessel CAD without significant proximal LAD CAD and
  - c. only a small area of viable myocardium or
  - d. no demonstrable ischemia on noninvasive testing. *(Level of Evidence: C)*
- Use of PCI or CABG for patients with borderline coronary stenoses (50% to 60% diameter in locations other than the left main coronary artery) and no demonstrable ischemia on noninvasive testing. *(Level of Evidence: C)*

**CABG (p. e279)**

**Asymptomatic or Mild Angina**

**Class IIb**

CABG may be considered for patients with asymptomatic or mild angina who have 1- or 2-vessel disease not involving the proximal LAD (If a large area of viable myocardium and high-risk criteria are met on noninvasive testing, this recommendation becomes (Class I). *(Level of Evidence: B)*

**CABG (p. e280)**

**Stable Angina**

**Class I**

CABG is beneficial for patients with stable angina who have developed disabling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained. *(Level of Evidence: B)*

**Class III**

CABG is not recommended for patients with stable angina who have 1- or 2-vessel disease not involving significant proximal LAD stenosis, patients who have mild symptoms that are unlikely due to myocardial ischemia, or patients who have not received an adequate trial of medical therapy and

- c. have only a small area of viable myocardium or *(Level of Evidence: B)*
- d. have no demonstrable ischemia on noninvasive testing. *(Level of Evidence: B)*

**PCI (p. e40)**

**Patients With Asymptomatic Ischemia or CCS Class I or II Angina**

**Class III**

PCI is not recommended in patients with asymptomatic ischemia or CCS class I or II angina who do not meet the criteria as listed under the class II recommendations or who have 1 or more of the following:

- a. Only a small area of viable myocardium at risk
- b. No objective evidence of ischemia.
- c. Lesions that have a low likelihood of successful dilatation.
- d. Mild symptoms that are unlikely to be due to myocardial ischemia.
- e. Factors associated with increased risk of morbidity or mortality.
- f. Left main disease and eligibility for CABG.
- g. Insignificant disease (less than 50% coronary stenosis). *(Level of Evidence: C)*
Chronic Stable Angina (p. 90-91)
Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients

Class IIb
Percutaneous coronary intervention or CABG for patients with one- or two-vessel CAD without significant proximal LAD CAD but with a moderate area of viable myocardium and demonstrable ischemia on noninvasive testing. *(Level of Evidence: C)*

PCI (p. e40)
Patients With Asymptomatic Ischemia or CCS Angina Class I or II

Class Ila
PCI is reasonable in patients with asymptomatic ischemia or CCS Class I or II angina and with 1 or more significant lesions in 1 or 2 coronary arteries suitable for PCI with a high likelihood of success and a low risk of morbidity and mortality. The vessels to be dilated must subtend a moderate to large area of viable myocardium or be associated with a moderate to severe degree of ischemia on noninvasive testing. *(Level of Evidence: B)*

Class IIb
PCI might be considered for patients with asymptomatic ischemia or CCS class I or II angina with nonproximal LAD CAD that subtends a moderate area of viable myocardium and demonstrates ischemia on noninvasive testing. *(Level of Evidence: C)*

CABG (p. e279)
Asymptomatic or Mild Angina

Class IIb
CABG may be considered for patients with asymptomatic or mild angina who have 1- or 2-vessel disease not involving the proximal LAD (If a large area of viable myocardium and high-risk criteria are met on noninvasive testing, this recommendation becomes Class I). *(Level of Evidence: B)*

CABG (p. e280)
Stable Angina

Class Ila
CABG may be useful for patients with stable angina who have 1- or 2-vessel CAD without significant proximal LAD stenosis but who have a moderate area of viable myocardium and demonstrable ischemia on noninvasive testing. *(Level of Evidence: B)*
15.  

- One or two vessel coronary artery disease without involvement of proximal LAD
- Intermediate risk-findings on non-invasive testing
- Receiving a course of maximal anti-ischemic medical therapy

**Chronic Stable Angina (p. 77-78)**

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class I**

Percutaneous coronary intervention or CABG for patients who have not been successfully treated by medical therapy (see text) and can undergo revascularization with acceptable risk. *(Level of Evidence: B)*

**Chronic Stable Angina (p. 90-91)**

**Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients**

**Class IIb**

Percutaneous coronary intervention or CABG for patients with one- or two-vessel CAD without significant proximal LAD CAD but with a moderate area of viable myocardium and demonstrable ischemia on noninvasive testing. *(Level of Evidence: C)*

**PCI (p. e40)**

**Patients With Asymptomatic Ischemia or CCS Angina Class I or II**

**Class IIa**

PCI is reasonable in patients with asymptomatic ischemia or CCS Class I or II angina and with 1 or more significant lesions in 1 or 2 coronary arteries suitable for PCI with a high likelihood of success and a low risk of morbidity and mortality. The vessels to be dilated must subtend a moderate to large area of viable myocardium or be associated with a moderate to severe degree of ischemia on noninvasive testing. *(Level of Evidence: B)*

**Class IIb**

PCI might be considered for patients with asymptomatic ischemia or CCS class I or II angina with nonproximal LAD CAD that subtends a moderate area of viable myocardium and demonstrates ischemia on noninvasive testing. *(Level of Evidence: C)*

**CABG (p. e279)**

**Asymptomatic or Mild Angina**

**Class IIb**

CABG may be considered for patients with asymptomatic or mild angina who have 1- or 2-vessel disease not involving the proximal LAD (If a large area of viable myocardium and high-risk criteria are met on noninvasive testing, this recommendation becomes Class I). *(Level of Evidence: B)*

**CABG (p. e280)**

**Stable Angina**

**Class I**

CABG is beneficial for patients with stable angina who have developed disabling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained. *(Level of Evidence: B)*

**Class IIa**

CABG may be useful for patients with stable angina who have 1- or 2-vessel CAD without significant proximal LAD stenosis but who have a moderate area of viable myocardium and demonstrable ischemia on noninvasive testing. *(Level of Evidence: B)*
16. ▪ One or two vessel coronary artery disease without involvement of proximal LAD
  ▪ High-risk findings on non-invasive testing
  ▪ Receiving no or minimal anti-ischemic medical therapy

**Chronic Stable Angina (p. 77-78)**

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class I**
- Percutaneous coronary intervention or CABG for patients with one- or two-vessel CAD without significant proximal LAD CAD but with a large area of viable myocardium and high-risk criteria on noninvasive testing. *(Level of Evidence: B)*
- In patients with prior PCI, CABG or PCI for recurrent stenosis associated with a large area of viable myocardium or high-risk criteria on noninvasive testing. *(Level of Evidence: C)*

**Chronic Stable Angina (p. 90-91)**

**Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients**

**Class I**
Percutaneous coronary intervention or CABG for patients with one- or two-vessel CAD without significant proximal LAD CAD but with a large area of viable myocardium and high-risk criteria on noninvasive testing. *(Level of Evidence: C)*

**PCI (p. e40)**

**Patients With Asymptomatic Ischemia or CCS Angina Class I or II**

**Class IIa**
PCI is reasonable in patients with asymptomatic ischemia or CCS Class I or II angina and with 1 or more significant lesions in 1 or 2 coronary arteries suitable for PCI with a high likelihood of success and a low risk of morbidity and mortality. The vessels to be dilated must subtend a moderate to large area of viable myocardium or be associated with a moderate to severe degree of ischemia on noninvasive testing. *(Level of Evidence: B)*

**CABG (p. e279)**

**Asymptomatic or Mild Angina**

**Class IIb**
CABG may be considered for patients with asymptomatic or mild angina who have 1- or 2-vessel disease not involving the proximal LAD *(If a large area of viable myocardium and high-risk criteria are met on noninvasive testing, this recommendation becomes Class I). (Level of Evidence: B)*

**CABG (p. e280)**

**Stable Angina**

**Class I**
- CABG is beneficial for patients with stable angina who have 1- or 2-vessel CAD without significant proximal LAD stenosis but with a large area of viable myocardium and high-risk criteria on noninvasive testing. *(Level of Evidence: B)*
- CABG is beneficial for patients with stable angina who have developed disabiling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained. *(Level of Evidence: B)*
### Chronic Stable Angina (p. 77-78)

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class I**
- Percutaneous coronary intervention or CABG for patients with one- or two-vessel CAD without significant proximal LAD CAD but with a large area of viable myocardium and high-risk criteria on noninvasive testing. *(Level of Evidence: B)*
- In patients with prior PCI, CABG or PCI for recurrent stenosis associated with a large area of viable myocardium or high-risk criteria on noninvasive testing. *(Level of Evidence: C)*
- Percutaneous coronary intervention or CABG for patients who have not been successfully treated by medical therapy (see text) and can undergo revascularization with acceptable risk. *(Level of Evidence: B)*

### Chronic Stable Angina (p. 90-91)

**Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients**

**Class I**
Percutaneous coronary intervention or CABG for patients with one- or two-vessel CAD without significant proximal LAD CAD but with a large area of viable myocardium and high-risk criteria on noninvasive testing. *(Level of Evidence: C)*

**PCI (p. e40)**

**Patients With Asymptomatic Ischemia or CCS Angina Class I or II**

**Class IIa**
PCI is reasonable in patients with asymptomatic ischemia or CCS Class I or II angina and with 1 or more significant lesions in 1 or 2 coronary arteries suitable for PCI with a high likelihood of success and a low risk of morbidity and mortality. The vessels to be dilated must subtend a moderate to large area of viable myocardium or be associated with a moderate to severe degree of ischemia on noninvasive testing. *(Level of Evidence: B)*

**CABG (p. e279)**

**Asymptomatic or Mild Angina**

**Class IIb**
CABG may be considered for patients with asymptomatic or mild angina who have 1- or 2-vessel disease not involving the proximal LAD (If a large area of viable myocardium and high-risk criteria are met on noninvasive testing, this recommendation becomes Class I). *(Level of Evidence: B)*

**CABG (p. e280)**

**Stable Angina**

**Class I**
- CABG is beneficial for patients with stable angina who have 1- or 2-vessel CAD without significant proximal LAD stenosis but with a large area of viable myocardium and high-risk criteria on noninvasive testing. *(Level of Evidence: B)*
- CABG is beneficial for patients with stable angina who have developed disabling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained. *(Level of Evidence: B)*
18.  - One or two vessel coronary artery disease without involvement of proximal LAD
   - No non-invasive testing performed
   No relevant guideline recommendation

19.  - One or two vessel coronary artery disease with borderline stenosis “50%-60%”
   - No non-invasive testing performed
   - No further invasive evaluation performed (i.e. FFR, IVUS)

   **Chronic Stable Angina (p. 90-91)**
   **Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients**
   **Class III**
   Use of PCI or CABG for patients with borderline coronary stenoses (50% to 60% diameter in locations other than the left main coronary artery) and no demonstrable ischemia on noninvasive testing. (*Level of Evidence: C*)

20.  - One or two vessel coronary artery disease with borderline stenosis “50%-60%”
   - No non-invasive testing performed or equivocal test results present
   - FFR less than 0.75 and/or IVUS with significant reduction in cross sectional area.
   No relevant guideline recommendation

21.  - One or two vessel coronary artery disease with borderline stenosis “50%-60%”
   - No non-invasive testing performed or equivocal test results present
   - FFR or IVUS findings do not meet criteria for significant stenosis
   No relevant guideline recommendation

22.  - Chronic total occlusion of one major epicardial coronary artery, without other coronary stenoses
   - Low-risk findings on non-invasive testing
   - Receiving no or minimal anti-ischemic medical therapy
   No relevant guideline recommendation

23.  - Chronic total occlusion of one major epicardial coronary artery, without other coronary stenoses
   - Low-risk findings on non-invasive testing
   - Receiving a course of maximal anti-ischemic medical therapy
   No relevant guideline recommendation
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<th>Scenario</th>
<th>Guidelines</th>
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| 24. | Chronic total occlusion of one major epicardial coronary artery, without other coronary stenoses | Intermediate-risk findings on non-invasive testing  
|     |                                                                          | Receiving no or minimal anti-ischemic medical therapy |
|     |                                                                         | No relevant guideline recommendation             |
| 25. | Chronic total occlusion of one major epicardial coronary artery, without other coronary stenoses | Intermediate-risk criteria on non-invasive testing  
|     |                                                                          | Receiving a course of maximal anti-ischemic medical therapy |
|     |                                                                         | No relevant guideline recommendation             |
| 26. | Chronic total occlusion of one major epicardial coronary artery, without other coronary stenoses | High-risk findings on non-invasive testing       |
|     |                                                                          | Receiving no or minimal anti-ischemic medical therapy |
|     |                                                                         | No relevant guideline recommendation             |
| 27. | Chronic total occlusion of one major epicardial coronary artery, without other coronary stenoses | High-risk criteria on non-invasive testing       |
|     |                                                                          | Receiving a course of maximal anti-ischemic medical therapy |
|     |                                                                         | No relevant guideline recommendation             |
28.  
- One vessel disease involving the proximal LAD
- Low-risk findings on non-invasive testing
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29.  
- One vessel disease involving the proximal LAD
- Low-risk findings on non-invasive testing
- Receiving maximal anti-ischemic medical therapy

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30.  ▪ One vessel disease involving the proximal LAD
    ▪ Intermediate-risk findings on non-invasive testing
    ▪ Receiving no or minimal anti-ischemic medical therapy

**Chronic Stable Angina (P. 77)**

Revascularization for Chronic Stable Angina  
Class IIa  
Use of PCI or CABG for patients with one-vessel disease with significant proximal LAD disease. *(Level of Evidence: B)*

**Chronic Stable Angina (P. 90)**

Revascularization with PCI and CABG in Asymptomatic Patients  
Class IIa  
Use of PCI or CABG for patients with one-vessel disease with significant proximal LAD disease. *(Level of Evidence: B)*

**PCI (p.e40)**  
Class IIb  
The effectiveness of PCI for patients with asymptomatic ischemia or CCS class I or II angina who have 2- or 3-vessel disease with significant proximal LAD CAD who are otherwise eligible for CABG with 1 arterial conduit and who have treated diabetes or abnormal LV function is not well established. *(Level of Evidence: B)*

**CABG (p. e279)**

Asymptomatic or Mild Angina  
Class IIa  
CABG can be beneficial for patients with asymptomatic or mild angina who have proximal LAD stenosis with 1- or 2-vessel disease. *(This recommendation becomes a Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50.)* *(Level of Evidence: A)*

**CABG (p.e280)**

Class IIa  
Stable Angina  
CABG is reasonable in patients with stable angina who have proximal LAD stenosis with 1-vessel disease. *(This recommendation becomes Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50.)* *(Level of Evidence: A)*
31.  ▪ One vessel disease involving the proximal LAD
      ▪ Intermediate-risk findings on non-invasive testing
      ▪ Receiving maximal anti-ischemic medical therapy

**Chronic Stable Angina (p. 77)**
Revascularization for Chronic Stable Angina
Class IIa
Use of PCI or CABG for patients with one-vessel disease with significant proximal LAD disease. *(Level of Evidence: B)*

**Chronic Stable Angina (p. 90)**
Revascularization with PCI and CABG in Asymptomatic Patients
Class IIa
Use of PCI or CABG for patients with one-vessel disease with significant proximal LAD disease. *(Level of Evidence: B)*

**PCI (p.e40)**
Class IIb
The effectiveness of PCI for patients with asymptomatic ischemia or CCS class I or II angina who have 2- or 3-vessel disease with significant proximal LAD CAD who are otherwise eligible for CABG with 1 arterial conduit and who have treated diabetes or abnormal LV function is not well established. *(Level of Evidence: B)*

**CABG (p. e279)**
Asymptomatic or Mild Angina
Class IIa
CABG can be beneficial for patients with asymptomatic or mild angina who have proximal LAD stenosis with 1- or 2-vessel disease. *(This recommendation becomes a Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50.)* *(Level of Evidence: A)*

**CABG (p.e280)**
Class IIa
Stable Angina
CABG is reasonable in patients with stable angina who have proximal LAD stenosis with 1-vessel disease. *(This recommendation becomes Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50.)* *(Level of Evidence: A)*
32. ▪ One vessel disease involving the proximal LAD
▪ High-risk findings on non-invasive testing
▪ Receiving no or minimal anti-ischemic medical therapy

Stable Angina (p. 77)
Revascularization for Chronic Stable Angina
Class IIa
Use of PCI or CABG for patients with one-vessel disease with significant proximal LAD disease. *(Level of Evidence: B)*

Stable Angina (p. 90)
Revascularization with PCI and CABG in Asymptomatic Patients
Class IIa
Use of PCI or CABG for patients with one-vessel disease with significant proximal LAD disease. *(Level of Evidence: B)*

PCI (p. e40)
Class IIb
The effectiveness of PCI for patients with asymptomatic ischemia or CCS class I or II angina who have 2- or 3-vessel disease with significant proximal LAD CAD who are otherwise eligible for CABG with 1 arterial conduit and who have treated diabetes or abnormal LV function is not well established. *(Level of Evidence: B)*

CABG (p. e279)
Asymptomatic or Mild Angina
Class IIa
CABG can be beneficial for patients with asymptomatic or mild angina who have proximal LAD stenosis with 1- or 2-vessel disease. *(This recommendation becomes a Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50.)* *(Level of Evidence: A)*

CABG (p. e280)
Class IIa
Stable Angina
CABG is reasonable in patients with stable angina who have proximal LAD stenosis with 1-vessel disease. *(This recommendation becomes Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50.)* *(Level of Evidence: A)*
One vessel disease involving the proximal LAD
High-risk findings on non-invasive testing
Receiving maximal anti-ischemic medical therapy

**Chronic Stable Angina (P. 77)**
Revascularization for Chronic Stable Angina
Class Ila
Use of PCI or CABG for patients with one-vessel disease with significant proximal LAD disease. *(Level of Evidence: B)*

**Chronic Stable Angina (P. 90)**
Revascularization with PCI and CABG in Asymptomatic Patients
Class Ila
Use of PCI or CABG for patients with one-vessel disease with significant proximal LAD disease. *(Level of Evidence: B)*

**PCI (p.e40)**
Class IIb
The effectiveness of PCI for patients with asymptomatic ischemia or CCS class I or II angina who have 2- or 3-vessel disease with significant proximal LAD CAD who are otherwise eligible for CABG with 1 arterial conduit and who have treated diabetes or abnormal LV function is not well established. *(Level of Evidence: B)*

**CABG (p.e279)**
Asymptomatic or Mild Angina
Class Ila
CABG can be beneficial for patients with asymptomatic or mild angina who have proximal LAD stenosis with 1- or 2-vessel disease. *(This recommendation becomes a Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50.)* *(Level of Evidence: A)*

**CABG (p.e280)**
Class Ila
Stable Angina
CABG is reasonable in patients with stable angina who have proximal LAD stenosis with 1-vessel disease. *(This recommendation becomes Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50.)* *(Level of Evidence: A)*
34. ▪ Two vessel disease involving the proximal LAD
  ▪ Low-risk findings on non-invasive testing
  ▪ Receiving no or minimal anti-ischemic medical therapy

**Chronic Stable Angina (p. 77-78)**

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class I**
- Coronary artery bypass grafting for patients with two-vessel disease with significant proximal LAD CAD and either abnormal LV function (ejection fraction less than 50%) or demonstrable ischemia on noninvasive testing. (*Level of Evidence: A*)
- Percutaneous coronary intervention for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy and normal LV function and who do not have treated diabetes. (*Level of Evidence: B*)

**Chronic Stable Angina (p. 90-91)**

**Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients**

(These recommendations are identical to those for symptomatic patients.)

**Class I**
- Percutaneous coronary intervention for patients with two- or three-vessel disease with significant proximal LAD CAD who have anatomy suitable for catheter-based therapy and normal LV function and who do not have treated diabetes. (*Level of Evidence: C*)

**CABG (p. e279)**

**Asymptomatic or Mild Angina**

**Class Ila**
- CABG can be beneficial for patients with asymptomatic or mild angina who have proximal LAD stenosis with 1- or 2-vessel disease. (This recommendation becomes a Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50.) (*Level of Evidence: A*)

**CABG (p. e280)**

**Stable Angina**

**Class I**
- CABG is recommended in patients with stable angina who have 2-vessel disease with significant proximal LAD stenosis and either EF less than 0.50 or demonstrable ischemia on noninvasive testing. (*Level of Evidence: A*)

**Class Ila**
- CABG is reasonable in patients with stable angina who have proximal LAD stenosis with 1-vessel disease. (This recommendation becomes Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50). (*Level of Evidence: A*)
35. ▪ Two vessel disease involving the proximal LAD
▪ Low-risk findings on non-invasive testing
▪ Receiving a course of maximal anti-ischemic medical therapy

**Chronic Stable Angina (p. 77-78)**

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class I**
- Coronary artery bypass grafting for patients with two-vessel disease with significant proximal LAD CAD and either abnormal LV function (ejection fraction less than 50%) or demonstrable ischemia on noninvasive testing. *(Level of Evidence: A)*
- Percutaneous coronary intervention for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy and normal LV function and who do not have treated diabetes. *(Level of Evidence: B)*

**Chronic Stable Angina (p. 90-91)**

**Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients**

*(These recommendations are identical to those for symptomatic patients.)*

**Class I**
- Percutaneous coronary intervention for patients with two- or three-vessel disease with significant proximal LAD CAD who have anatomy suitable for catheter-based therapy and normal LV function and who do not have treated diabetes. *(Level of Evidence: C)*

**CABG (p. e279)**

**Asymptomatic or Mild Angina**

**Class IIA**
- CABG can be beneficial for patients with asymptomatic or mild angina who have proximal LAD stenosis with 1- or 2-vessel disease. (This recommendation becomes a Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50.) *(Level of Evidence: A)*

**CABG (p. e280)**

**Stable Angina**

**Class I**
- CABG is recommended in patients with stable angina who have 2-vessel disease with significant proximal LAD stenosis and either EF less than 0.50 or demonstrable ischemia on noninvasive testing. *(Level of Evidence: A)*

**Class IIA**
- CABG is reasonable in patients with stable angina who have proximal LAD stenosis with 1-vessel disease. (This recommendation becomes Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50). *(Level of Evidence: A)*
36.  ▪ Two vessel coronary artery disease involving the proximal LAD
  ▪ Intermediate-risk findings on non-invasive testing
  ▪ Receiving no or minimal anti-ischemic medical therapy

**Chronic Stable Angina (p. 77-78)**
Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina

**Class I**
- Coronary artery bypass grafting for patients with two-vessel disease with significant proximal LAD CAD and either abnormal LV function (ejection fraction less than 50%) or demonstrable ischemia on noninvasive testing. *(Level of Evidence: A)*
- Percutaneous coronary intervention for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy and normal LV function and who do not have treated diabetes. *(Level of Evidence: B)*

**Chronic Stable Angina (p. 90-91)**
Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients
(These recommendations are identical to those for symptomatic patients.)

**Class I**
Percutaneous coronary intervention for patients with two- or three-vessel disease with significant proximal LAD CAD who have anatomy suitable for catheter-based therapy and normal LV function and who do not have treated diabetes. *(Level of Evidence: C)*

**CABG (p. e279)**
**Asymptomatic or Mild Angina**
**Class Ila**
CABG can be beneficial for patients with asymptomatic or mild angina who have proximal LAD stenosis with 1- or 2-vessel disease. (This recommendation becomes a Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50.) *(Level of Evidence: A)*

**CABG (p. e280)**
**Stable Angina**
**Class I**
CABG is recommended in patients with stable angina who have 2-vessel disease with significant proximal LAD stenosis and either EF less than 0.50 or demonstrable ischemia on noninvasive testing. *(Level of Evidence: A)*

**Class Ila**
CABG is reasonable in patients with stable angina who have proximal LAD stenosis with 1-vessel disease. (This recommendation becomes Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50). *(Level of Evidence: A)*
37.  
- Two vessel coronary artery disease involving the proximal LAD
- Intermediate-risk findings on non-invasive testing
- Receiving a course of maximal anti-ischemic medical therapy

**Chronic Stable Angina (p. 77-78)**

Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina

**Class I**
- Coronary artery bypass grafting for patients with two-vessel disease with significant proximal LAD CAD and either abnormal LV function (ejection fraction less than 50%) or demonstrable ischemia on noninvasive testing. *(Level of Evidence: A)*
- Percutaneous coronary intervention for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy and normal LV function and who do not have treated diabetes. *(Level of Evidence: B)*

**Chronic Stable Angina (p. 90-91)**

Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients

(These recommendations are identical to those for symptomatic patients.)

**Class I**
- Percutaneous coronary intervention for patients with two- or three-vessel disease with significant proximal LAD CAD who have anatomy suitable for catheter-based therapy and normal LV function and who do not have treated diabetes. *(Level of Evidence: C)*

**CABG (p. e279)**

Asymptomatic or Mild Angina

**Class Ila**
- CABG can be beneficial for patients with asymptomatic or mild angina who have proximal LAD stenosis with 1- or 2-vessel disease. (This recommendation becomes a Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50.) *(Level of Evidence: A)*

**CABG (p. e280)**

Stable Angina

**Class I**
- CABG is recommended in patients with stable angina who have 2-vessel disease with significant proximal LAD stenosis and either EF less than 0.50 or demonstrable ischemia on noninvasive testing. *(Level of Evidence: A)*

**Class Ila**
- CABG is reasonable in patients with stable angina who have proximal LAD stenosis with 1-vessel disease. (This recommendation becomes Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50). *(Level of Evidence: A)*
38.  
- Two vessel coronary artery disease involving the proximal LAD
- High-risk findings on non-invasive testing
- Receiving no or minimal anti-ischemic medical therapy

**Chronic Stable Angina (p. 77-78)**

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class I**
- Coronary artery bypass grafting for patients with two-vessel disease with significant proximal LAD CAD and either abnormal LV function (ejection fraction less than 50%) or demonstrable ischemia on noninvasive testing. (*Level of Evidence: A*)
- Percutaneous coronary intervention for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy and normal LV function and who do not have treated diabetes. (*Level of Evidence: B*)

**Chronic Stable Angina (p. 90-91)**

**Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients**

(These recommendations are identical to those for symptomatic patients.)

**Class I**
- Percutaneous coronary intervention for patients with two- or three-vessel disease with significant proximal LAD CAD who have anatomy suitable for catheter-based therapy and normal LV function and who do not have treated diabetes. (*Level of Evidence: C*)

**CABG (p. e279)**

**Asymptomatic or Mild Angina**

**Class IIa**
- CABG can be beneficial for patients with asymptomatic or mild angina who have proximal LAD stenosis with 1- or 2-vessel disease. (This recommendation becomes a Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50.) (*Level of Evidence: A*)

**CABG (p. e280)**

**Stable Angina**

**Class I**
- CABG is recommended in patients with stable angina who have 2-vessel disease with significant proximal LAD stenosis and either EF less than 0.50 or demonstrable ischemia on noninvasive testing. (*Level of Evidence: A*)

**Class IIa**
- CABG is reasonable in patients with stable angina who have proximal LAD stenosis with 1-vessel disease. (This recommendation becomes Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50). (*Level of Evidence: A*)
39.  
- Two vessel coronary artery disease involving the proximal LAD
- High-risk findings on non-invasive testing
- Receiving a course of maximal anti-ischemic medical therapy

**Chronic Stable Angina** *(p. 77-78)*

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class I**
- Coronary artery bypass grafting for patients with two-vessel disease with significant proximal LAD CAD and either abnormal LV function (ejection fraction less than 50%) or demonstrable ischemia on noninvasive testing. *(Level of Evidence: A)*
- Percutaneous coronary intervention for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy and normal LV function and who do not have treated diabetes. *(Level of Evidence: B)*

**Chronic Stable Angina** *(p. 90-91)*

**Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients**

*(These recommendations are identical to those for symptomatic patients.)*

**Class I**
- Percutaneous coronary intervention for patients with two- or three-vessel disease with significant proximal LAD CAD who have anatomy suitable for catheter-based therapy and normal LV function and who do not have treated diabetes. *(Level of Evidence: C)*

**CABG** *(p. e279)*

**Asymptomatic or Mild Angina**

**Class Ila**
- CABG can be beneficial for patients with asymptomatic or mild angina who have proximal LAD stenosis with 1- or 2-vessel disease. *(This recommendation becomes a Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50.)* *(Level of Evidence: A)*

**CABG** *(p. e280)*

**Stable Angina**

**Class I**
- CABG is recommended in patients with stable angina who have 2-vessel disease with significant proximal LAD stenosis and either EF less than 0.50 or demonstrable ischemia on noninvasive testing. *(Level of Evidence: A)*

**Class Ila**
- CABG is reasonable in patients with stable angina who have proximal LAD stenosis with 1-vessel disease. *(This recommendation becomes Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50).* *(Level of Evidence: A)*
Three vessel coronary artery disease (no left main)
- Low-risk findings on non-invasive testing including normal LV systolic function
- Receiving no or minimal anti-ischemic medical therapy

**Chronic Stable Angina (p. 77-78)**

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

Class I
Coronary artery bypass grafting for patients with three-vessel disease. The survival benefit is greater in patients with abnormal LV function (ejection fraction less than 50%). *(Level of Evidence: A)*

Class IIb
Compared with CABG, PCI for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy, and who have treated diabetes or abnormal LV function. *(Level of Evidence: B)*

**Chronic Stable Angina (p. 90-91)**

**Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients**

Class I
Coronary artery bypass grafting for patients with three-vessel disease. The survival benefit is greater in patients with abnormal LV function (ejection fraction less than 50%). *(Level of Evidence: C)*

**PCI (p. e40)**

**Patients With Asymptomatic Ischemia or CCS Class I or II Angina**

Class IIb
The effectiveness of PCI for patients with asymptomatic ischemia or CCS class I or II angina who have 2- or 3-vessel disease with significant proximal LAD CAD who are otherwise eligible for CABG with 1 arterial conduit and who have treated diabetes or abnormal LV function is not well established. *(Level of Evidence: B)*

**PCI (p. e41)**

**Patients With CCS Class III Angina**

Class IIa
It is reasonable that PCI be performed in patients with CCS class III angina and single-vessel or multivessel CAD who are undergoing medical therapy and who have 1 or more significant lesions in 1 or more coronary arteries suitable for PCI with a high likelihood of success and low risk of morbidity or mortality. *(Level of Evidence: B)*

Class IIb
PCI may be considered in patients with CCS class III angina with single-vessel or multivessel CAD who are undergoing medical therapy and who have 1 or more lesions to be dilated with a reduced likelihood of success. *(Level of Evidence: B)*

**CABG (p. e279)**

**Asymptomatic or Mild Angina**

Class I
CABG is useful in patients with asymptomatic ischemia or mild angina who have 3-vessel disease. (Survival benefit is greater in patients with abnormal LV function; e.g., EF less than 0.50 and/or large areas of demonstrable myocardial ischemia.) *(Level of Evidence: C)*

**CABG (p. e280)**

**Stable Angina**

Class I
CABG is recommended for patients with stable angina who have 3-vessel disease. (Survival benefit is greater when LVEF is less than 0.50.) *(Level of Evidence: A)*
Three vessel coronary artery disease (no left main)
- Low-risk findings on non-invasive testing including normal LV systolic function
- Receiving a course of maximal anti-ischemic medical therapy

**Chronic Stable Angina (p. 77-78)**

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

- **Class I**
  - Coronary artery bypass grafting for patients with three-vessel disease. The survival benefit is greater in patients with abnormal LV function (ejection fraction less than 50%). *(Level of Evidence: A)*

- **Class IIb**
  - Compared with CABG, PCI for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy, and who have treated diabetes or abnormal LV function. *(Level of Evidence: B)*

**Chronic Stable Angina (p. 90-91)**

**Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients**

- **Class I**
  - Coronary artery bypass grafting for patients with three-vessel disease. The survival benefit is greater in patients with abnormal LV function (ejection fraction less than 50%). *(Level of Evidence: C)*

**PCI (p. e40)**

**Patients With Asymptomatic Ischemia or CCS Class I or II Angina**

- **Class IIb**
  - The effectiveness of PCI for patients with asymptomatic ischemia or CCS class I or II angina who have 2- or 3-vessel disease with significant proximal LAD CAD who are otherwise eligible for CABG with 1 arterial conduit and who have treated diabetes or abnormal LV function is not well established. *(Level of Evidence: B)*

**PCI (p. e41)**

**Patients With CCS Class III Angina**

- **Class IIa**
  - It is reasonable that PCI be performed in patients with CCS class III angina and single-vessel or multivessel CAD who are undergoing medical therapy and who have 1 or more significant lesions in 1 or more coronary arteries suitable for PCI with a high likelihood of success and low risk of morbidity or mortality. *(Level of Evidence: B)*

- **Class IIb**
  - PCI may be considered in patients with CCS class III angina with single-vessel or multivessel CAD who are undergoing medical therapy and who have 1 or more lesions to be dilated with a reduced likelihood of success. *(Level of Evidence: B)*

**CABG (p. e279)**

**Asymptomatic or Mild Angina**

- **Class I**
  - CABG is useful in patients with asymptomatic ischemia or mild angina who have 3-vessel disease. *(Survival benefit is greater in patients with abnormal LV function; e.g., EF less than 0.50 and/or large areas of demonstrable myocardial ischemia.)* *(Level of Evidence: C)*

**CABG (p. e280)**

**Stable Angina**

- **Class I**
  - CABG is recommended for patients with stable angina who have 3-vessel disease. *(Survival benefit is greater when LVEF is less than 0.50.)* *(Level of Evidence: A)*
  - CABG is beneficial for patients with stable angina who have developed disabling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained. *(Level of Evidence: B)*
42.  
- Three vessel coronary artery disease (no left main)
- Intermediate-risk findings on non-invasive testing
- Receiving no or minimal anti-ischemic medical therapy

**Chronic Stable Angina (p. 77-78)**

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class I**
Coronary artery bypass grafting for patients with three-vessel disease. The survival benefit is greater in patients with abnormal LV function (ejection fraction less than 50%). *(Level of Evidence: A)*

**Class IIb**
Compared with CABG, PCI for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy, and who have treated diabetes or abnormal LV function. *(Level of Evidence: B)*

**Chronic Stable Angina (p. 90-91)**

**Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients**
(These recommendations are identical to those for symptomatic patients.)

**Class I**
Coronary artery bypass grafting for patients with three-vessel disease. The survival benefit is greater in patients with abnormal LV function (ejection fraction less than 50%). *(Level of Evidence: C)*

**PCI (p. e40)**

**Patients With Asymptomatic Ischemia or CCS Class I or II Angina**

**Class IIb**
The effectiveness of PCI for patients with asymptomatic ischemia or CCS class I or II angina who have 2- or 3-vessel disease with significant proximal LAD CAD who are otherwise eligible for CABG with 1 arterial conduit and who have treated diabetes or abnormal LV function is not well established. *(Level of Evidence: B)*

**CABG (p. e279)**

**Asymptomatic or Mild Angina**

**Class I**
CABG is useful in patients with asymptomatic ischemia or mild angina who have 3-vessel disease. (Survival benefit is greater in patients with abnormal LV function; e.g., EF less than 0.50 and/or large areas of demonstrable myocardial ischemia.) *(Level of Evidence: C)*

**CABG (p. e280)**

**Stable Angina**

**Class I**
CABG is recommended for patients with stable angina who have 3-vessel disease. (Survival benefit is greater when LVEF is less than 0.50.) *(Level of Evidence: A)*
43. ▪ Three vessel coronary artery disease (no left main)
   ▪ Intermediate-risk findings on non-invasive testing
   ▪ Receiving a course of maximal anti-ischemic medical therapy

**Chronic Stable Angina (p. 77-78)**

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class I**
Coronary artery bypass grafting for patients with three-vessel disease. The survival benefit is greater in patients with abnormal LV function (ejection fraction less than 50%). *(Level of Evidence: A)*

**Class IIb**
Compared with CABG, PCI for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy, and who have treated diabetes or abnormal LV function. *(Level of Evidence: B)*

**Chronic Stable Angina (p. 90-91)**

**Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients**
(These recommendations are identical to those for symptomatic patients.)

**Class I**
Coronary artery bypass grafting for patients with three-vessel disease. The survival benefit is greater in patients with abnormal LV function (ejection fraction less than 50%). *(Level of Evidence: C)*

**PCI (p. e40)**

**Patients With Asymptomatic Ischemia or CCS Class I or II Angina**

**Class IIb**
The effectiveness of PCI for patients with asymptomatic ischemia or CCS class I or II angina who have 2- or 3-vessel disease with significant proximal LAD CAD who are otherwise eligible for CABG with 1 arterial conduit and who have treated diabetes or abnormal LV function is not well established. *(Level of Evidence: B)*

**PCI (p. e41)**

**Patients With CCS Class III Angina**

**Class IIa**
It is reasonable that PCI be performed in patients with CCS class III angina and single-vessel or multivessel CAD who are undergoing medical therapy and who have 1 or more significant lesions in 1 or more coronary arteries suitable for PCI with a high likelihood of success and low risk of morbidity or mortality. *(Level of Evidence: B)*

**Class IIb**
PCI may be considered in patients with CCS class III angina with single-vessel or multivessel CAD who are undergoing medical therapy and who have 1 or more lesions to be dilated with a reduced likelihood of success. *(Level of Evidence: B)*

**CABG (p. e279)**

**Asymptomatic or Mild Angina**

**Class I**
CABG is useful in patients with asymptomatic ischemia or mild angina who have 3-vessel disease. (Survival benefit is greater in patients with abnormal LV function; e.g., EF less than 0.50 and/or large areas of demonstrable myocardial ischemia.) *(Level of Evidence: C)*

**CABG (p. e280)**

**Stable Angina**

**Class I**
- CABG is recommended for patients with stable angina who have 3-vessel disease. (Survival benefit is greater when LVEF is less than 0.50.) *(Level of Evidence: A)*
- CABG is beneficial for patients with stable angina who have developed disabling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained. *(Level of Evidence: B)*
44.  
- Three vessel coronary artery disease (no left main)
- High-risk findings on non-invasive testing
- Receiving no or minimal anti-ischemic medical therapy

**Chronic Stable Angina (p. 77-78)**

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class I**
Coronary artery bypass grafting for patients with three-vessel disease. The survival benefit is greater in patients with abnormal LV function (ejection fraction less than 50%). *(Level of Evidence: A)*

**Class IIb**
Compared with CABG, PCI for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy, and who have treated diabetes or abnormal LV function. *(Level of Evidence: B)*

**Chronic Stable Angina (p. 90-91)**

**Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients**
(These recommendations are identical to those for symptomatic patients.)

**Class I**
Coronary artery bypass grafting for patients with three-vessel disease. The survival benefit is greater in patients with abnormal LV function (ejection fraction less than 50%). *(Level of Evidence: C)*

**PCI (p. e40)**

**Patients With Asymptomatic Ischemia or CCS Class I or II Angina**

**Class IIb**
The effectiveness of PCI for patients with asymptomatic ischemia or CCS class I or II angina who have 2- or 3-vessel disease with significant proximal LAD CAD who are otherwise eligible for CABG with 1 arterial conduit and who have treated diabetes or abnormal LV function is not well established. *(Level of Evidence: B)*

**CABG (p. e279)**

**Asymptomatic or Mild Angina**

**Class I**
CABG is useful in patients with asymptomatic ischemia or mild angina who have 3-vessel disease. (Survival benefit is greater in patients with abnormal LV function; e.g., EF less than 0.50 and/or large areas of demonstrable myocardial ischemia.) *(Level of Evidence: C)*

**CABG (p. e280)**

**Stable Angina**

**Class I**
CABG is recommended for patients with stable angina who have 3-vessel disease. (Survival benefit is greater when LVEF is less than 0.50.) *(Level of Evidence: A)*
45.  
- Three vessel coronary artery disease (no left main)
- High-risk findings on non-invasive testing
- Receiving a course of maximal anti-ischemic medical therapy

**Chronic Stable Angina (p. 77-78)**

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class I**

Coronary artery bypass grafting for patients with three-vessel disease. The survival benefit is greater in patients with abnormal LV function (ejection fraction less than 50%). *(Level of Evidence: A)*

**Class IIb**

Compared with CABG, PCI for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy, and who have treated diabetes or abnormal LV function. *(Level of Evidence: B)*

**Chronic Stable Angina (p. 90-91)**

**Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients**

(These recommendations are identical to those for symptomatic patients.)

**Class I**

Coronary artery bypass grafting for patients with three-vessel disease. The survival benefit is greater in patients with abnormal LV function (ejection fraction less than 50%). *(Level of Evidence: C)*

**PCI (p. e40)**

**Patients With Asymptomatic Ischemia or CCS Class I or II Angina**

**Class IIb**

The effectiveness of PCI for patients with asymptomatic ischemia or CCS class I or II angina who have 2- or 3-vessel disease with significant proximal LAD CAD who are otherwise eligible for CABG with 1 arterial conduit and who have treated diabetes or abnormal LV function is not well established. *(Level of Evidence: B)*

**PCI (p. e41)**

**Patients With CCS Class III Angina**

**Class IIa**

It is reasonable that PCI be performed in patients with CCS class III angina and single-vessel or multivessel CAD who are undergoing medical therapy and who have 1 or more significant lesions in 1 or more coronary arteries suitable for PCI with a high likelihood of success and low risk of morbidity or mortality. *(Level of Evidence: B)*

**Class IIb**

PCI may be considered in patients with CCS class III angina with single-vessel or multivessel CAD who are undergoing medical therapy and who have 1 or more lesions to be dilated with a reduced likelihood of success. *(Level of Evidence: B)*

**CABG (p. e279)**

**Asymptomatic or Mild Angina**

**Class I**

- CABG is useful in patients with asymptomatic ischemia or mild angina who have 3-vessel disease. (Survival benefit is greater in patients with abnormal LV function; e.g., EF less than 0.50 and/or large areas of demonstrable myocardial ischemia.) *(Level of Evidence: C)*

**CABG (p. e280)**

**Stable Angina**

**Class I**

- CABG is recommended for patients with stable angina who have 3-vessel disease. (Survival benefit is greater when LVEF is less than 0.50.) *(Level of Evidence: A)*
- CABG is beneficial for patients with stable angina who have developed disabling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained. *(Level of Evidence: B)*
46.  
- Three vessel coronary artery disease (no left main)
- Abnormal LV systolic function

No relevant guideline recommendations.

47.  
- Left Main Stenosis

_Chiroic Stable Angina (p. 77-78)_

_Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina_

**Class I**

Coronary artery bypass grafting for patients with significant left main coronary disease. *(Level of Evidence: A)*

_CABG (p. e279)_

**Clinical Subsets: Asymptomatic or Mild Angina**

**Class I**

CABG should be performed in patients with asymptomatic or mild angina who have significant left main coronary artery stenosis. *(Level of Evidence: A)*

_CABG (p. e279)_

**Asymptomatic or Mild Angina**

**Class I**

CABG should be performed in patients with asymptomatic or mild angina who have significant left main coronary artery stenosis. *(Level of Evidence: A)*

_CABG (p. e280)_

**Stable Angina**

**Class I**

CABG is recommended for patients with stable angina who have significant left main coronary artery stenosis. *(Level of Evidence: A)*
### Table 3. Patients with Prior Bypass Surgery (Without Acute Coronary Syndromes)

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| 48. | ▪ One or more stenoses in saphenous vein graft(s)  
▪ Low-risk findings on non-invasive testing including normal LV systolic function  
▪ Receiving no or minimal anti-ischemic medical therapy |

**Chronic Stable Angina (p. 77-78)**  
**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**  
**Class IIa**  
- Repeat CABG for patients with multiple saphenous vein graft stenoses, especially when there is significant stenosis of a graft supplying the LAD. It may be appropriate to use PCI for focal saphenous vein graft lesions or multiple stenoses in poor candidates for reoperative surgery. *(Level of Evidence: C)*

**PCI (p. e56)**  
**Percutaneous Intervention in Patients With Prior Coronary Bypass Surgery**  
**Class IIa**  
- PCI is reasonable in patients with ischemia that occurs 1 to 3 years after CABG and who have preserved LV function with discrete lesions in graft conduits. *(Level of Evidence: B)*  
- PCI is reasonable when technically feasible in patients with a patent left internal mammary artery graft who have clinically significant obstructions in other vessels. *(Level of Evidence: C)*  
- PCI is reasonable in patients with diseased vein grafts more than 3 years after CABG. *(Level of Evidence: B)*

**CABG (p. e284-285)**  
**Patients With Previous CABG**  
**Class I**  
Coronary bypass should be performed in patients with prior CABG without patent bypass grafts but with Class I indications for surgery for native-vessel CAD (significant left main coronary stenosis, left main equivalent, 3-vessel disease). *(Level of Evidence: B)*

**Class II**  
Coronary bypass is reasonable in patients who have prior CABG if atherosclerotic vein grafts with stenoses greater than 50% supplying the LAD coronary artery or large areas of myocardium are present. *(Level of Evidence: B)*
49.  
- One or more stenoses in saphenous vein graft(s)
- Low-risk findings on non-invasive testing including normal LV systolic function
- Receiving a course of maximal anti-ischemic medical therapy

**Chronic Stable Angina (p. 77-78)**

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class IIa**
- Repeat CABG for patients with multiple saphenous vein graft stenoses, especially when there is significant stenosis of a graft supplying the LAD. It may be appropriate to use PCI for focal saphenous vein graft lesions or multiple stenoses in poor candidates for reoperative surgery. *(Level of Evidence: C)*

**PCI (p. e41)**

**Patients With CCS Class III Angina**

**Class IIa**
- It is reasonable that PCI be performed in patients with CCS class III angina with single-vessel or multivessel CAD who are undergoing medical therapy with focal saphenous vein graft lesions or multiple stenoses who are poor candidates for reoperative surgery. *(Level of Evidence: C)*

**PCI (p. e56)**

**Percutaneous Intervention in Patients With Prior Coronary Bypass Surgery**

**Class IIa**
- PCI is reasonable in patients with ischemia that occurs 1 to 3 years after CABG and who have preserved LV function with discrete lesions in graft conduits. *(Level of Evidence: B)*
- PCI is reasonable when technically feasible in patients with a patent left internal mammary artery graft who have clinically significant obstructions in other vessels. *(Level of Evidence: C)*
- PCI is reasonable in patients with diseased vein grafts more than 3 years after CABG. *(Level of Evidence: B)*

**CABG (p. e284-285)**

**Patients With Previous CABG**

**Class I**
- Coronary bypass should be performed in patients with prior CABG for disabling angina despite optimal nonsurgical therapy. (If angina is not typical, then objective evidence of ischemia should be obtained.) *(Level of Evidence: B)*
- Coronary bypass should be performed in patients with prior CABG without patent bypass grafts but with Class I indications for surgery for native-vessel CAD (significant left main coronary stenosis, left main equivalent, 3-vessel disease). *(Level of Evidence: B)*

**Class II**
- Coronary bypass is reasonable in patients who have prior CABG if atherosclerotic vein grafts with stenoses greater than 50% supplying the LAD coronary artery or large areas of myocardium are present. *(Level of Evidence: B)*
### Chronic Stable Angina (p. 77-78)

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class IIa**
- Repeat CABG for patients with multiple saphenous vein graft stenoses, especially when there is significant stenosis of a graft supplying the LAD. It may be appropriate to use PCI for focal saphenous vein graft lesions or multiple stenoses in poor candidates for reoperative surgery. *(Level of Evidence: C)*

### PCI (p. e56)

**Percutaneous Intervention in Patients With Prior Coronary Bypass Surgery**

**Class IIa**
- PCI is reasonable in patients with ischemia that occurs 1 to 3 years after CABG and who have preserved LV function with discrete lesions in graft conduits. *(Level of Evidence: B)*
- PCI is reasonable when technically feasible in patients with a patent left internal mammary artery graft who have clinically significant obstructions in other vessels. *(Level of Evidence: C)*
- PCI is reasonable in patients with diseased vein grafts more than 3 years after CABG. *(Level of Evidence: B)*

### CABG (p. e284-285)

**Patients With Previous CABG**

**Class I**
- Coronary bypass should be performed in patients with prior CABG for disabling angina despite optimal nonsurgical therapy. (If angina is not typical, then objective evidence of ischemia should be obtained.) *(Level of Evidence: B)*
- Coronary bypass should be performed in patients with prior CABG without patent bypass grafts but with Class I indications for surgery for native-vessel CAD (significant left main coronary stenosis, left main equivalent, 3-vessel disease). *(Level of Evidence: B)*

**Class II**
- Coronary bypass is reasonable in patients with prior CABG and bypassable distal vessel(s) with a large area of threatened myocardium by noninvasive studies. *(Level of Evidence: B)*
- Coronary bypass is reasonable in patients who have prior CABG if atherosclerotic vein grafts with stenoses greater than 50% supplying the LAD coronary artery or large areas of myocardium are present. *(Level of Evidence: B)*
51. ▪ One or more stenoses in saphenous vein graft(s)
  ▪ Intermediate-risk findings on non-invasive testing
  ▪ Receiving a course of maximal anti-ischemic medical therapy

**Chronic Stable Angina (p. 77-78)**

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class Ila**

▪ Repeat CABG for patients with multiple saphenous vein graft stenoses, especially when there is significant stenosis of a graft supplying the LAD. It may be appropriate to use PCI for focal saphenous vein graft lesions or multiple stenoses in poor candidates for reoperative surgery. *(Level of Evidence: C)*

**CABG (p. e284-285)**

**Patients With Previous CABG**

**Class I**

▪ Coronary bypass should be performed in patients with prior CABG for disabling angina despite optimal nonsurgical therapy. (If angina is not typical, then objective evidence of ischemia should be obtained.) *(Level of Evidence: B)*

▪ Coronary bypass should be performed in patients with prior CABG without patent bypass grafts but with Class I indications for surgery for native-vessel CAD (significant left main coronary stenosis, left main equivalent, 3-vessel disease). *(Level of Evidence: B)*

**Class II**

▪ Coronary bypass is reasonable in patients with prior CABG and bypassable distal vessel(s) with a large area of threatened myocardium by noninvasive studies. *(Level of Evidence: B)*

▪ Coronary bypass is reasonable in patients who have prior CABG if atherosclerotic vein grafts with stenoses greater than 50% supplying the LAD coronary artery or large areas of myocardium are present. *(Level of Evidence: B)*
52. ▪ One or more stenoses in saphenous vein graft(s)
  ▪ High-risk findings on non-invasive testing
  ▪ Receiving no or minimal anti-ischemic medical therapy

**Chronic Stable Angina (p. 77-78)**

Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina

Class Ila

▪ Repeat CABG for patients with multiple saphenous vein graft stenoses, especially when there is significant stenosis of a graft supplying the LAD. It may be appropriate to use PCI for focal saphenous vein graft lesions or multiple stenoses in poor candidates for reoperative surgery. *(Level of Evidence: C)*

**Chronic Stable Angina (p. 90-91)**

Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients

Class IIb

Repeat CABG for patients with multiple saphenous vein graft stenoses, with high-risk criteria on noninvasive testing, especially when there is significant stenosis of a graft supplying the LAD. Percutaneous coronary intervention may be appropriate for focal saphenous vein graft lesions or multiple stenoses in poor candidates for reoperative surgery. *(Level of Evidence: C)*

**PCI (p. e56)**

Percutaneous Intervention in Patients With Prior Coronary Bypass Surgery

Class Ila

▪ PCI is reasonable in patients with ischemia that occurs 1 to 3 years after CABG and who have preserved LV function with discrete lesions in graft conduits. *(Level of Evidence: B)*

▪ PCI is reasonable in patients with diseased vein grafts more than 3 years after CABG. *(Level of Evidence: B)*

**CABG (p. e284-285)**

Patients With Previous CABG

Class I

▪ Coronary bypass should be performed in patients with prior CABG without patent bypass grafts but with Class I indications for surgery for native-vessel CAD (significant left main coronary stenosis, left main equivalent, 3-vessel disease). *(Level of Evidence: B)*

Class II

▪ Coronary bypass is reasonable in patients with prior CABG and bypassable distal vessel(s) with a large area of threatened myocardium by noninvasive studies. *(Level of Evidence: B)*

▪ Coronary bypass is reasonable in patients who have prior CABG if atherosclerotic vein grafts with stenoses greater than 50% supplying the LAD coronary artery or large areas of myocardium are present. *(Level of Evidence: B)*
### 53. One or more stenoses in saphenous vein graft(s)
- High-risk findings on non-invasive testing
- Receiving a course of maximal anti-ischemic medical therapy

#### Chronic Stable Angina (p. 77-78)
**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class IIa**
- Repeat CABG for patients with multiple saphenous vein graft stenoses, especially when there is significant stenosis of a graft supplying the LAD. It may be appropriate to use PCI for focal saphenous vein graft lesions or multiple stenoses in poor candidates for reoperative surgery. *(Level of Evidence: C)*

#### Chronic Stable Angina (p. 90-91)
**Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients**

**Class IIb**
Repeat CABG for patients with multiple saphenous vein graft stenoses, with high-risk criteria on noninvasive testing, especially when there is significant stenosis of a graft supplying the LAD. Percutaneous coronary intervention may be appropriate for focal saphenous vein graft lesions or multiple stenoses in poor candidates for reoperative surgery. *(Level of Evidence: C)*

#### CABG (p. 284-285)
**Patients With Previous CABG**

**Class I**
- Coronary bypass should be performed in patients with prior CABG for disabling angina despite optimal nonsurgical therapy. (If angina is not typical, then objective evidence of ischemia should be obtained.) *(Level of Evidence: B)*
- Coronary bypass should be performed in patients with prior CABG without patent bypass grafts but with Class I indications for surgery for native-vessel CAD (significant left main coronary stenosis, left main equivalent, 3-vessel disease). *(Level of Evidence: B)*

**Class II**
- Coronary bypass is reasonable in patients who have prior CABG and bypassable distal vessel(s) with a large area of threatened myocardium by noninvasive studies. *(Level of Evidence: B)*
- Coronary bypass is reasonable in patients who have prior CABG if atherosclerotic vein grafts with stenoses greater than 50% supplying the LAD coronary artery or large areas of myocardium are present. *(Level of Evidence: B)*

### 54. One or more lesions in native coronary arteries without bypass grafts
- All bypass grafts patent and without significant disease
- Low-risk findings on non-invasive testing including normal LV systolic function
- Receiving no or minimal anti-ischemic medical therapy

#### PCI (p. e56)
**Percutaneous Intervention in Patients With Prior Coronary Bypass Surgery**

**Class IIa**
PCI is reasonable when technically feasible in patients with a patent left internal mammary artery graft who have clinically significant obstructions in other vessels. *(Level of Evidence: C)*

#### CABG (p. 284-285)
**Patients With Previous CABG**

**Class I**

**Class II**
Coronary bypass is reasonable in patients who have prior CABG if atherosclerotic vein grafts with stenoses greater than 50% supplying the LAD coronary artery or large areas of myocardium are present. *(Level of Evidence: B)*
55. ▪ One or more lesions in native coronary arteries without bypass grafts
   ▪ All bypass grafts patent and without significant disease
   ▪ Low-risk findings on non-invasive testing including normal LV systolic function
   ▪ Receiving a course of maximal anti-ischemic medical therapy

**PCI (p. e56)**

**Percutaneous Intervention in Patients With Prior Coronary Bypass Surgery**

**Class IIa**

PCI is reasonable when technically feasible in patients with a patent left internal mammary artery graft who have clinically significant obstructions in other vessels. *(Level of Evidence: C)*

**CABG (p. e284-285)**

**Patients With Previous CABG**

**Class I**

Coronary bypass should be performed in patients with prior CABG for disabling angina despite optimal nonsurgical therapy. *(If angina is not typical, then objective evidence of ischemia should be obtained.)* *(Level of Evidence: B)*

**Class II**

Coronary bypass is reasonable in patients who have prior CABG if atherosclerotic vein grafts with stenoses greater than 50% supplying the LAD coronary artery or large areas of myocardium are present. *(Level of Evidence: B)*

56. ▪ One or more lesions in native coronary arteries without bypass grafts
   ▪ All bypass grafts patent and without significant disease
   ▪ Intermediate-risk findings on non-invasive testing
   ▪ Receiving no or minimal anti-ischemic medical therapy

**PCI (p. e56)**

**Percutaneous Intervention in Patients With Prior Coronary Bypass Surgery**

**Class IIa**

PCI is reasonable when technically feasible in patients with a patent left internal mammary artery graft who have clinically significant obstructions in other vessels. *(Level of Evidence: C)*

57. ▪ One or more lesions in native coronary arteries without bypass grafts
   ▪ All bypass grafts patent and without significant disease
   ▪ Intermediate-risk findings on non-invasive testing
   ▪ Receiving a course of maximal anti-ischemic medical therapy

**PCI (p. e56)**

**5.5. Percutaneous Intervention in Patients With Prior Coronary Bypass Surgery**

**Class IIa**

PCI is reasonable when technically feasible in patients with a patent left internal mammary artery graft who have clinically significant obstructions in other vessels. *(Level of Evidence: C)*

**CABG (p. e284-285)**

**Patients With Previous CABG**

**Class I**

Coronary bypass should be performed in patients with prior CABG for disabling angina despite optimal nonsurgical therapy. *(If angina is not typical, then objective evidence of ischemia should be obtained.)* *(Level of Evidence: B)*

**Class II**

Coronary bypass is reasonable in patients who have prior CABG if atherosclerotic vein grafts with stenoses greater than 50% supplying the LAD coronary artery or large areas of myocardium are present. *(Level of Evidence: B)*
58. ▪ One or more lesions in native coronary arteries without bypass grafts
▪ All bypass grafts patent and without significant disease
▪ High-risk findings on non-invasive testing
▪ Receiving no or minimal anti-ischemic medical therapy

Chronic Stable Angina (p. 90-91)
Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients
Class IIb
Repeat CABG for patients with multiple saphenous vein graft stenoses, with high-risk criteria on noninvasive testing, especially when there is significant stenosis of a graft supplying the LAD. Percutaneous coronary intervention may be appropriate for focal saphenous vein graft lesions or multiple stenoses in poor candidates for reoperative surgery. (Level of Evidence: C)

PCI (p. e56)
Percutaneous Intervention in Patients With Prior Coronary Bypass Surgery
Class IIa
PCI is reasonable when technically feasible in patients with a patent left internal mammary artery graft who have clinically significant obstructions in other vessels. (Level of Evidence: C)

CABG (p. e284-285)
Patients With Previous CABG
Class I
▪ Coronary bypass should be performed in patients with prior CABG for disabling angina despite optimal nonsurgical therapy. (If angina is not typical, then objective evidence of ischemia should be obtained.) (Level of Evidence: B)

Class II
▪ Coronary bypass is reasonable in patients with prior CABG and bypassable distal vessel(s) with a large area of threatened myocardium by noninvasive studies. (Level of Evidence: B)
▪ Coronary bypass is reasonable in patients who have prior CABG if atherosclerotic vein grafts with stenoses greater than 50% supplying the LAD coronary artery or large areas of myocardium are present. (Level of Evidence: B)

59. ▪ One or more lesions in native coronary arteries without bypass grafts
▪ All bypass grafts patent and without significant disease
▪ High-risk finding on non-invasive testing
▪ Receiving a course of maximal anti-ischemic medical therapy

PCI (p. e56)
Percutaneous Intervention in Patients With Prior Coronary Bypass Surgery
Class IIa
PCI is reasonable when technically feasible in patients with a patent left internal mammary artery graft who have clinically significant obstructions in other vessels. (Level of Evidence: C)

CABG (p. e284-285)
Patients With Previous CABG
Class I
Coronary bypass should be performed in patients with prior CABG for disabling angina despite optimal nonsurgical therapy. (If angina is not typical, then objective evidence of ischemia should be obtained.) (Level of Evidence: B)

Class II
▪ Coronary bypass is reasonable in patients with prior CABG and bypassable distal vessel(s) with a large area of threatened myocardium by noninvasive studies. (Level of Evidence: B)
▪ Coronary bypass is reasonable in patients who have prior CABG if atherosclerotic vein grafts with stenoses greater than 50% supplying the LAD coronary artery or large areas of myocardium are present. (Level of Evidence: B)
Table 4. Method of Revascularization
Advanced Coronary Disease, CCS Angina Greater than or equal to Class III and/or evidence of intermediate to high risk findings on non-invasive testing

<table>
<thead>
<tr>
<th>60.</th>
<th>Two vessel coronary artery disease with proximal LAD stenosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No diabetes and normal LVEF</td>
</tr>
</tbody>
</table>

**Chronic Stable Angina (p. 77-78)**
Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina

**Class I**
- Coronary artery bypass grafting for patients with two-vessel disease with significant proximal LAD CAD and either abnormal ventricular function (ejection fraction less than 50%) or demonstrable ischemia on non-invasive testing. *(Level of Evidence: A)*
- Percutaneous coronary intervention for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy and normal LV function and who do not have treated diabetes. *(Level of Evidence: B)*
- Percutaneous coronary intervention or CABG for patients with one- or two-vessel CAD without significant proximal LAD but with a large area of viable myocardium and high-risk criteria on noninvasive testing. *(Level of Evidence: B)*

**CABG (p. e280)**
Stable Angina

**Class I**
CABG is beneficial for patients with stable angina who have developed disabling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained. *(Level of Evidence: B)*

<table>
<thead>
<tr>
<th>61.</th>
<th>Two vessel coronary artery disease with proximal LAD stenosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Diabetes</td>
</tr>
</tbody>
</table>

**Chronic Stable Angina (p. 77-78)**
Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina

**Class IIb**
Compared with CABG, PCI for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy, and who have treated diabetes or abnormal LV function. *(Level of Evidence: B)*
62.  ▪ Two vessel coronary artery disease with proximal LAD stenosis
    ▪ Depressed LVEF

**Chronic Stable Angina (p. 77-78)**

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class I**
- Percutaneous coronary intervention for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy and normal LV function and who do not have treated diabetes. *(Level of Evidence: B)*
- Percutaneous coronary intervention or CABG for patients with one- or two-vessel CAD without significant proximal LAD but with a large area of viable myocardium and high-risk criteria on noninvasive testing. *(Level of Evidence: B)*

**Class IIb**
- Compared with CABG, PCI for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy, and who have treated diabetes or abnormal LV function. *(Level of Evidence: B)*
- Use of PCI for patients with significant left main coronary disease who are not candidates for CABG. *(Level of Evidence: C)*

**CABG (p. e280)**

**Stable Angina**

**Class I**
- CABG is recommended in patients with stable angina who have 2-vessel disease with significant proximal LAD stenosis and either EF less than 0.50 or demonstrable ischemia on noninvasive testing. *(Level of Evidence: A)*
- CABG is beneficial for patients with stable angina who have developed disabling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained. *(Level of Evidence: B)*

**Class IIa**

CABG is reasonable in patients with stable angina who have proximal LAD stenosis with 1-vessel disease. *(This recommendation becomes Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50). *(Level of Evidence: A)*

**CABG (p. e283)**

**Poor LV Function**

**Class I**

CABG should be performed in patients with poor LV function who have proximal LAD stenosis with 2- or 3-vessel disease. *(Level of Evidence: B)*
### Chronic Stable Angina (p. 77-78)

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class I**
- Percutaneous coronary intervention for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy and normal LV function and who do not have treated diabetes. *(Level of Evidence: B)*
- Coronary artery bypass grafting for patients with three-vessel disease. The survival benefit is greater in patients with abnormal LV function (ejection fraction less than 50%). *(Level of Evidence: A)*

**Class IIb**
Compared with CABG, PCI for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy, and who have treated diabetes or abnormal LV function. *(Level of Evidence: B)*

**CABG (p. e 280)**

**Stable Angina**

**Class I**
- CABG is recommended for patients with stable angina who have 3-vessel disease. (Survival benefit is greater when LVEF is less than 0.50.) *(Level of Evidence: A)*
- CABG is beneficial for patients with stable angina who have developed disabling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained. *(Level of Evidence: B)*
### Chronic Stable Angina (p. 77-78)

#### Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina

**Class I**

Coronary artery bypass grafting for patients with three-vessel disease. The survival benefit is greater in patients with abnormal LV function (ejection fraction less than 50%). *(Level of Evidence: A)*

**Class IIb**

Compared with CABG, PCI for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy, and who have treated diabetes or abnormal LV function. *(Level of Evidence: B)*

#### PCI (p. e41)

**Patients With CCS Class III Angina**

**Class III**

PCI is not recommended for patients with CCS class III angina with single-vessel or multivessel CAD, no evidence of myocardial injury or ischemia on objective testing, and no trial of medical therapy, or who have 1 of the following:

a. Only a small area of myocardium at risk. *(Level of Evidence: C)*

b. All lesions or the culprit lesion to be dilated with morphology that conveys a low likelihood of success. *(Level of Evidence: C)*

c. A high risk of procedure-related morbidity or mortality. *(Level of Evidence: C)*

d. Insignificant disease (less than 50% coronary stenosis). *(Level of Evidence: C)*

e. Significant left main CAD and candidacy for CABG. *(Level of Evidence: C)*

#### CABG (p. e280)

**Stable Angina**

**Class I**

- CABG is recommended for patients with stable angina who have 3-vessel disease. *(Survival benefit is greater when LVEF is less than 0.50.)* *(Level of Evidence: A)*

- CABG is beneficial for patients with stable angina who have developed disabling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained. *(Level of Evidence: B)*
65. Three vessel coronary artery disease
   - Depressed LVEF

**Chronic Stable Angina (p. 77-78)**

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class I**

Coronary artery bypass grafting for patients with three-vessel disease. The survival benefit is greater in patients with abnormal LV function (ejection fraction less than 50%). *(Level of Evidence: A)*

**Class IIb**

Compared with CABG, PCI for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy, and who have treated diabetes or abnormal LV function. *(Level of Evidence: B)*

**CABG (p. e280)**

**Stable Angina**

**Class I**

- CABG is beneficial for patients with stable angina who have developed disabling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained. *(Level of Evidence: B)*
- CABG is recommended for patients with stable angina who have 3-vessel disease. (Survival benefit is greater when LVEF is less than 0.50.) *(Level of Evidence: A)*

**PCI (p. e41)**

**Patients With CCS Class III Angina**

**Class III**

PCI is not recommended for patients with CCS class III angina with single-vessel or multivessel CAD, no evidence of myocardial injury or ischemia on objective testing, and no trial of medical therapy, or who have 1 of the following:

a. Only a small area of myocardium at risk. *(Level of Evidence: C)*

b. All lesions or the culprit lesion to be dilated with morphology that conveys a low likelihood of success. *(Level of Evidence: C)*

c. A high risk of procedure-related morbidity or mortality. *(Level of Evidence: C)*

d. Insignificant disease (less than 50% coronary stenosis). *(Level of Evidence: C)*

e. Significant left main CAD and candidacy for CABG. *(Level of Evidence: C)*
Chronic Stable Angina (p. 77-78)

Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina

Class I
Coronary artery bypass grafting for patients with significant left main coronary disease. *(Level of Evidence: A)*

Class IIb
Use of PCI for patients with significant left main coronary disease who are not candidates for CABG. *(Level of Evidence: C)*

Class III
Use of PCI in patients with significant left main coronary artery disease who are candidates for CABG. *(Level of Evidence: B)*

Chronic Stable Angina (p. 90-91)

Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients

Class IIb
Use of PCI in patients with significant left main coronary artery disease who are candidates for CABG. *(Level of Evidence: B)*

CABG (p. e280)

Stable Angina

Class I
- CABG is recommended for patients with stable angina who have left main equivalent: Significant (greater than or equal to 70%) stenosis of the proximal LAD and proximal left circumflex artery. *(Level of Evidence: A)*
- CABG is recommended for patients with stable angina who have significant left main coronary artery stenosis. *(Level of Evidence: A)*
- CABG is beneficial for patients with stable angina who have developed disabling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained. *(Level of Evidence: B)*

PCI (p. e41)

Patients With CCS Class III Angina

Class III
PCI is not recommended for patients with CCS class III angina with single-vessel or multivessel CAD, no evidence of myocardial injury or ischemia on objective testing, and no trial of medical therapy, or who have 1 of the following:
- Only a small area of myocardium at risk. *(Level of Evidence: C)*
- All lesions or the culprit lesion to be dilated with morphology that conveys a low likelihood of success. *(Level of Evidence: C)*
- A high risk of procedure-related morbidity or mortality. *(Level of Evidence: C)*
- Insignificant disease (less than 50% coronary stenosis). *(Level of Evidence: C)*
- Significant left main CAD and candidacy for CABG. *(Level of Evidence: C)*
Chronic Stable Angina (p. 77-78)
Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina

**Class I**
Coronary artery bypass grafting for patients with significant left main coronary disease. *(Level of Evidence: A)*

**Class IIb**
Use of PCI for patients with significant left main coronary disease who are not candidates for CABG. *(Level of Evidence: C)*

Chronic Stable Angina (p. 90-91)
Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients

**Class IIb**
Use of PCI in patients with significant left main coronary artery disease who are candidates for CABG. *(Level of Evidence: B)*

CABG (p. e280)
Stable Angina

**Class I**
- CABG is recommended for patients with stable angina who have left main equivalent: Significant (greater than or equal to 70%) stenosis of the proximal LAD and proximal left circumflex artery. *(Level of Evidence: A)*
- CABG is recommended for patients with stable angina who have significant left main coronary artery stenosis. *(Level of Evidence: A)*
- CABG is beneficial for patients with stable angina who have developed disabling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained. *(Level of Evidence: B)*

PCI (p. e41)
Patients With CCS Class III Angina

**Class III**
PCI is not recommended for patients with CCS class III angina with single-vessel or multivessel CAD, no evidence of myocardial injury or ischemia on objective testing, and no trial of medical therapy, or who have 1 of the following:
- a. Only a small area of myocardium at risk. *(Level of Evidence: C)*
- b. All lesions or the culprit lesion to be dilated with morphology that conveys a low likelihood of success. *(Level of Evidence: C)*
- c. A high risk of procedure-related morbidity or mortality. *(Level of Evidence: C)*
- d. Insignificant disease (less than 50% coronary stenosis). *(Level of Evidence: C)*
- e. Significant left main CAD and candidacy for CABG. *(Level of Evidence: C)*
68.  ▪ Isolated left main stenosis
▪ Depressed LVEF

**Chronic Stable Angina (p. 77-78)**
Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina

**Class I**
Coronary artery bypass grafting for patients with significant left main coronary disease. *(Level of Evidence: A)*

**Class IIb**
Use of PCI for patients with significant left main coronary disease who are not candidates for CABG. *(Level of Evidence: C)*

**Chronic Stable Angina (p. 90-91)**
Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients

**Class IIb**
Use of PCI in patients with significant left main coronary artery disease who are candidates for CABG. *(Level of Evidence: B)*

**CABG (p. e280)**

**Stable Angina**

**Class I**
- CABG is recommended for patients with stable angina who have left main equivalent: Significant (greater than or equal to 70%) stenosis of the proximal LAD and proximal left circumflex artery. *(Level of Evidence: A)*
- CABG is recommended for patients with stable angina who have significant left main coronary artery stenosis. *(Level of Evidence: A)*
- CABG is recommended for patients with stable angina who have 3-vessel disease. (Survival benefit is greater when LVEF is less than 0.50.) *(Level of Evidence: A)*
- CABG is beneficial for patients with stable angina who have developed disabling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained. *(Level of Evidence: B)*

**CABG (p. e283)**

**Poor LV Function**

**Class I**
CABG should be performed in patients with poor LV function who have significant left main coronary artery stenosis. *(Level of Evidence: B)*

**Class IIb**
Use of PCI for patients with significant left main coronary disease who are not candidates for CABG. *(Level of Evidence: C)*

**Class III**
Use of PCI in patients with significant left main coronary artery disease who are candidates for CABG. *(Level of Evidence: B)*

**PCI (p. e41)**

**Patients With CCS Class III Angina**

**Class III**
PCI is not recommended for patients with CCS class III angina with single-vessel or multivessel CAD, no evidence of myocardial injury or ischemia on objective testing, and no trial of medical therapy, or who have 1 of the following:
- a. Only a small area of myocardium at risk. *(Level of Evidence: C)*
- b. All lesions or the culprit lesion to be dilated with morphology that conveys a low likelihood of success. *(Level of Evidence: C)*
- c. A high risk of procedure-related morbidity or mortality. *(Level of Evidence: C)*
- d. Insufficient disease (less than 50% coronary stenosis). *(Level of Evidence: C)*
- e. Significant left main CAD and candidacy for CABG. *(Level of Evidence: C)*
69. ▪ Left main stenosis and additional coronary artery disease  
▪ No diabetes and normal LVEF

**Chronic Stable Angina (p. 77-78)**  
**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**  
**Class I**  
Coronary artery bypass grafting for patients with significant left main coronary disease. *(Level of Evidence: A)*

**Class IIb**  
Use of PCI for patients with significant left main coronary disease who are not candidates for CABG. *(Level of Evidence: C)*

**Chronic Stable Angina (p. 90-91)**  
**Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients**  
**Class IIb**  
Use of PCI in patients with significant left main coronary artery disease who are candidates for CABG. *(Level of Evidence: B)*

**CABG (p. e280)**  
**Stable Angina**  
**Class I**  
▪ CABG is recommended for patients with stable angina who have left main equivalent: Significant (greater than or equal to 70%) stenosis of the proximal LAD and proximal left circumflex artery. *(Level of Evidence: A)*  
▪ CABG is recommended for patients with stable angina who have significant left main coronary artery stenosis. *(Level of Evidence: A)*  
▪ CABG is recommended for patients with stable angina who have 3-vessel disease. *(Survival benefit is greater when LVEF is less than 0.50.)* *(Level of Evidence: A)*  
▪ CABG is beneficial for patients with stable angina who have developed disabling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained. *(Level of Evidence: B)*

**PCI (p. e41)**  
**Patients With CCS Class III Angina**  
**Class III**  
PCI is not recommended for patients with CCS class III angina with single-vessel or multivessel CAD, no evidence of myocardial injury or ischemia on objective testing, and no trial of medical therapy, or who have 1 of the following:  
   a. Only a small area of myocardium at risk. *(Level of Evidence: C)*  
   b. All lesions or the culprit lesion to be dilated with morphology that conveys a low likelihood of success. *(Level of Evidence: C)*  
   c. A high risk of procedure-related morbidity or mortality. *(Level of Evidence: C)*  
   d. Insignificant disease (less than 50% coronary stenosis). *(Level of Evidence: C)*  
   e. Significant left main CAD and candidacy for CABG. *(Level of Evidence: C)*
Chronic Stable Angina (p. 77-78)
Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina

Class I
Coronary artery bypass grafting for patients with significant left main coronary disease. *(Level of Evidence: A)*

Class IIb
Use of PCI for patients with significant left main coronary disease who are not candidates for CABG. *(Level of Evidence: C)*

Chronic Stable Angina (p. 90-91)
Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients

Class IIb
Use of PCI in patients with significant left main coronary artery disease who are candidates for CABG. *(Level of Evidence: B)*

CABG (p. e280)
Stable Angina

Class I
- CABG is recommended for patients with stable angina who have left main equivalent: Significant (greater than or equal to 70%) stenosis of the proximal LAD and proximal left circumflex artery. *(Level of Evidence: A)*
- CABG is recommended for patients with stable angina who have significant left main coronary artery stenosis. *(Level of Evidence: A)*
- CABG is recommended for patients with stable angina who have 3-vessel disease. (Survival benefit is greater when LVEF is less than 0.50.) *(Level of Evidence: A)*
- CABG is beneficial for patients with stable angina who have developed disabling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained. *(Level of Evidence: B)*

PCI (p. e41)
Patients With CCS Class III Angina

Class III
PCI is not recommended for patients with CCS class III angina with single-vessel or multivessel CAD, no evidence of myocardial injury or ischemia on objective testing, and no trial of medical therapy, or who have 1 of the following:
- Only a small area of myocardium at risk. *(Level of Evidence: C)*
- All lesions or the culprit lesion to be dilated with morphology that conveys a low likelihood of success. *(Level of Evidence: C)*
- A high risk of procedure-related morbidity or mortality. *(Level of Evidence: C)*
- Insignificant disease (less than 50% coronary stenosis). *(Level of Evidence: C)*
- Significant left main CAD and candidacy for CABG. *(Level of Evidence: C)*
71. ▪ Left main stenosis and additional coronary artery disease
▪ Depressed LVEF

**Chronic Stable Angina (p. 77-78)**

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class I**
Coronary artery bypass grafting for patients with significant left main coronary disease. *(Level of Evidence: A)*

**Class IIb**
Use of PCI for patients with significant left main coronary disease who are not candidates for CABG. *(Level of Evidence: C)*

**Chronic Stable Angina (p. 90-91)**

**Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients**

**Class IIb**
Use of PCI in patients with significant left main coronary artery disease who are candidates for CABG. *(Level of Evidence: B)*

**CABG (p. 280)**

**Stable Angina**

**Class I**
- CABG is recommended for patients with stable angina who have left main equivalent: Significant (greater than or equal to 70%) stenosis of the proximal LAD and proximal left circumflex artery. *(Level of Evidence: A)*
- CABG is recommended for patients with stable angina who have significant left main coronary artery stenosis. *(Level of Evidence: A)*
- CABG is recommended for patients with stable angina who have 3-vessel disease. (Survival benefit is greater when LVEF is less than 0.50.) *(Level of Evidence: A)*
- CABG is beneficial for patients with stable angina who have developed disabling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained. *(Level of Evidence: B)*

**CABG (p. 283)**

**Poor LV Function**

**Class I**
CABG should be performed in patients with poor LV function who have significant left main coronary artery stenosis. *(Level of Evidence: B)*

**Class IIb**
Use of PCI for patients with significant left main coronary disease who are not candidates for CABG. *(Level of Evidence: C)*

**PCI (p. 41)**

**Patients With CCS Class III Angina**

**Class III**
PCI is not recommended for patients with CCS class III angina with single-vessel or multivessel CAD, no evidence of myocardial injury or ischemia on objective testing, and no trial of medical therapy, or who have 1 of the following:
   a. Only a small area of myocardium at risk. *(Level of Evidence: C)*
   b. All lesions or the culprit lesion to be dilated with morphology that conveys a low likelihood of success. *(Level of Evidence: C)*
   c. A high risk of procedure-related morbidity or mortality. *(Level of Evidence: C)*
   d. Insignificant disease (less than 50% coronary stenosis). *(Level of Evidence: C)*
   e. Significant left main CAD and candidacy for CABG. *(Level of Evidence: C)*
72. Prior bypass surgery with native three-vessel disease and failure of multiple bypass grafts
   - LIMA remains patent to a native coronary artery
   - Depressed LVEF

**Chronic Stable Angina (p. 77-78)**

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class I**
Coronary artery bypass grafting for patients with significant left main coronary disease. (*Level of Evidence: A*)

**Class IIb**
Use of PCI for patients with significant left main coronary disease who are not candidates for CABG. (*Level of Evidence: C*)

**Chronic Stable Angina (p. 90-91)**

**Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients**

**Class IIb**
Use of PCI in patients with significant left main coronary artery disease who are candidates for CABG. (*Level of Evidence: B*)

**CABG (p. e280)**

**Stable Angina**

**Class I**
- CABG is recommended for patients with stable angina who have left main equivalent: Significant (greater than or equal to 70%) stenosis of the proximal LAD and proximal left circumflex artery. (*Level of Evidence: A*)
- CABG is recommended for patients with stable angina who have significant left main coronary artery stenosis. (*Level of Evidence: A*)
- CABG is recommended for patients with stable angina who have 3-vessel disease. (Survival benefit is greater when LVEF is less than 0.50.) (*Level of Evidence: A*)
- CABG is beneficial for patients with stable angina who have developed disabling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained. (*Level of Evidence: B*)

**CABG (p. e283)**

**Poor LV Function**

**Class I**
CABG should be performed in patients with poor LV function who have significant left main coronary artery stenosis. (*Level of Evidence: B*)

**Class IIb**
Use of PCI for patients with significant left main coronary disease who are not candidates for CABG. (*Level of Evidence: C*)

**Class III**
Use of PCI in patients with significant left main coronary artery disease who are candidates for CABG. (*Level of Evidence: B*)

**PCI (p. e41)**

**Patients With CCS Class III Angina**

**Class III**
P CI is not recommended for patients with CCS class III angina with single-vessel or multivessel CAD, no evidence of myocardial injury or ischemia on objective testing, and no trial of medical therapy, or who have 1 of the following:
   a. Only a small area of myocardium at risk. (*Level of Evidence: C*)
   b. All lesions or the culprit lesion to be dilated with morphology that conveys a low likelihood of success. (*Level of Evidence: C*)
   c. A high risk of procedure-related morbidity or mortality. (*Level of Evidence: C*)
   d. Insignificant disease (less than 50% coronary stenosis). (*Level of Evidence: C*)
   e. Significant left main CAD and candidacy for CABG. (*Level of Evidence: C*)
Prior bypass surgery with native three-vessel disease and failure of multiple bypass grafts
- LIMA was used as a graft but is no longer functional
- Depressed LVEF

**Chronic Stable Angina (p. 77-78)**

**Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina**

**Class I**

Coronary artery bypass grafting for patients with significant left main coronary disease. *(Level of Evidence: A)*

**Class IIb**

Use of PCI for patients with significant left main coronary disease who are not candidates for CABG. *(Level of Evidence: C)*

**Chronic Stable Angina (p. 90-91)**

**Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients**

**Class IIb**

Use of PCI in patients with significant left main coronary artery disease who are candidates for CABG. *(Level of Evidence: B)*

**CABG (p. e280)**

**Stable Angina**

**Class I**

- CABG is recommended for patients with stable angina who have left main equivalent: Significant (greater than or equal to 70%) stenosis of the proximal LAD and proximal left circumflex artery. *(Level of Evidence: A)*
- CABG is recommended for patients with stable angina who have significant left main coronary artery stenosis. *(Level of Evidence: A)*
- CABG is recommended for patients with stable angina who have 3-vessel disease. (Survival benefit is greater when LVEF is less than 0.50.) *(Level of Evidence: A)*
- CABG is beneficial for patients with stable angina who have developed disabling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained. *(Level of Evidence: B)*

**CABG (p. e283)**

**Poor LV Function**

**Class I**

CABG should be performed in patients with poor LV function who have significant left main coronary artery stenosis. *(Level of Evidence: B)*

**Class IIb**

Use of PCI for patients with significant left main coronary disease who are not candidates for CABG. *(Level of Evidence: C)*

**Class III**

Use of PCI in patients with significant left main coronary artery disease who are candidates for CABG. *(Level of Evidence: B)*

**PCI (p. e41)**

**Patients With CCS Class III Angina**

**Class III**

PCI is not recommended for patients with CCS class III angina with single-vessel or multivessel CAD, no evidence of myocardial injury or ischemia on objective testing, and no trial of medical therapy, or who have 1 of the following:

- a. Only a small area of myocardium at risk. *(Level of Evidence: C)*
- b. All lesions or the culprit lesion to be dilated with morphology that conveys a low likelihood of success. *(Level of Evidence: C)*
- c. A high risk of procedure-related morbidity or mortality. *(Level of Evidence: C)*
- d. Insignificant disease (less than 50% coronary stenosis). *(Level of Evidence: C)*
- e. Significant left main CAD and candidacy for CABG. *(Level of Evidence: C)*