

Normal Dooler Echcardiographic Values for Prosthetic Aortic Valves

| Valve | Size | Peak gradient (mm Hg) | Mean gradient (mm Hg) | Effective orifice area (cm ²) |
|---|-------|--------------------------|--------------------------|--|
| ATS <i>Bileaflet</i> | 19 | 47.0 ± 12.6 | 25.3 ± 8.0 | 1.1 ± 0.3 |
| | 21 | 23.7 ± 6.8 | 15.9 ± 5.0 | 1.4 ± 0.5 |
| | 23 | | 14.4 ± 4.9 | 1.7 ± 0.5 |
| | 25 | | 11.3 ± 3.7 | 2.1 ± 0.7 |
| | 27 | | 8.4 ± 3.7 | 2.5 ± 0.1 |
| | 29 | | 8.0 ± 3.0 | 3.1 ± 0.8 |
| ATS AP <i>Bileaflet</i> | 18 | | 21.0 ± 1.8 | 1.2 ± 0.3 |
| | 20 | 21.4 ± 4.2 | 11.1 ± 3.5 | 1.3 ± 0.3 |
| | 22 | 18.7 ± 8.3 | 10.5 ± 4.5 | 1.7 ± 0.4 |
| | 24 | 15.1 ± 5.6 | 7.5 ± 3.1 | 2.0 ± 0.6 |
| | 26 | | 6.0 ± 2.0 | 2.1 ± 0.4 |
| | 19 | 32.5 ± 8.5 | 19.5 ± 5.5 | 1.3 ± 0.2 |
| Baxter Perimount <i>Stented bovine pericardial</i> | 21 | 24.9 ± 7.7 | 13.8 ± 4.0 | 1.3 ± 0.3 |
| | 23 | 19.9 ± 7.4 | 11.5 ± 3.9 | 1.6 ± 0.3 |
| | 25 | 16.5 ± 7.8 | 10.7 ± 3.8 | 1.6 ± 0.4 |
| | 27 | 12.8 ± 5.4 | 4.8 ± 2.2 | 2.0 ± 0.4 |
| Biocor <i>Stented porcine</i> | 23 | 30.0 ± 10.7 | 20 ± 6.6 | 1.3 ± 0.3 |
| | 25 | 23.0 ± 7.9 | 16 ± 5.1 | 1.7 ± 0.4 |
| | 27 | 22.0 ± 6.5 | 15.0 ± 3.7 | 2.2 ± 0.4 |
| Extended Biocor <i>Stentless</i> | 19-21 | 17.5 ± 6.5 | 9.6 ± 3.6 | 1.4 ± 0.4 |
| | 23 | 14.7 ± 7.3 | 7.7 ± 3.8 | 1.7 ± 0.4 |
| | 25 | 14.0 ± 4.3 | 7.4 ± 2.5 | 1.8 ± 0.4 |
| Bioflo <i>Stented bovine pericardial</i> | 19 | 37.2 ± 8.8 | 26.4 ± 5.5 | 0.7 ± 0.1 |
| | 21 | 28.7 ± 6.2 | 18.7 ± 5.5 | 1.1 ± 0.1 |
| Bjork-Shiley <i>Single tilting disc</i> | 21 | 38.9 ± 11.9 | 21.8 ± 3.4 | 1.1 ± 0.3 |
| | 23 | 28.8 ± 11.2 | 15.7 ± 5.3 | 1.3 ± 0.3 |
| | 25 | 23.7 ± 8.2 | 13.0 ± 5.0 | 1.5 ± 0.4 |
| | 27 | | 10.0 ± 2.0 | 1.6 ± 0.3 |
| Carbomedics Reduced <i>Bileaflet</i> | 19 | 43.4 ± 1.2 | 24.4 ± 1.2 | 1.2 ± 0.1 |
| | 19 | 38.0 ± 12.8 | 18.9 ± 8.3 | 1.0 ± 0.3 |
| Carbomedics Standard <i>Bileaflet</i> | 21 | 26.8 ± 10.1 | 12.9 ± 5.4 | 1.5 ± 0.4 |
| | 23 | 22.5 ± 7.4 | 11.0 ± 4.6 | 1.4 ± 0.3 |
| | 25 | 19.6 ± 7.8 | 9.1 ± 3.5 | 1.8 ± 0.4 |
| | 27 | 17.5 ± 7.1 | 7.9 ± 3.2 | 2.2 ± 0.2 |
| | 29 | 9.1 ± 4.7 | 5.6 ± 3.0 | 3.2 ± 1.6 |
| | 21 | 30.2 ± 10.9 | 14.9 ± 5.4 | 1.2 ± 0.3 |
| Carbomedics Tophat <i>Bileaflet</i> | 23 | 24.2 ± 7.6 | 12.5 ± 4.4 | 1.4 ± 0.4 |
| | 25 | | 9.5 ± 2.9 | 1.6 ± 0.32 |

Normal Dooler Echcardiographic Values for Prosthetic Aortic Valves
 (continued)

| Valve | Size | Peak gradient (mm Hg) | Mean gradient (mm Hg) | Effective orifice area (cm ²) |
|-----------------------------------|------|--------------------------|--------------------------|---|
| Carpentier Edwards | 19 | 32.1 ± 3.4 | 24.2 ± 8.6 | 1.2 ± 0.3 |
| Pericardial | 21 | 25.7 ± 9.9 | 20.3 ± 9.1 | 1.5 ± 0.4 |
| <i>Stented bovine pericardial</i> | 23 | 21.7 ± 8.6 | 13.0 ± 5.3 | 1.8 ± 0.3 |
| | 25 | 16.5 ± 5.4 | 9.0 ± 2.3 | |
| Carpentier Edwards | 19 | 43.5 ± 12.7 | 25.6 ± 8.0 | 0.9 ± 0.2 |
| Standard | 21 | 27.7 ± 7.6 | 17.3 ± 6.2 | 1.5 ± 0.3 |
| <i>Stented porcine</i> | 23 | 28.9 ± 7.5 | 16.1 ± 6.2 | 1.7 ± 0.5 |
| | 25 | 24.0 ± 7.1 | 12.9 ± 4.6 | 1.9 ± 0.5 |
| | 27 | 22.1 ± 8.2 | 12.1 ± 5.5 | 2.3 ± 0.6 |
| | 29 | | 9.9 ± 2.9 | 2.8 ± 0.5 |
| Carpentier Supra-Annular | 19 | 34.1 ± 2.7 | 17.5 ± 3.8 | 1.1 ± 0.1 |
| <i>Stented porcine</i> | 21 | 28.0 ± 10.5 | 13.4 ± 4.5 | 1.4 ± 0.9 |
| | 23 | 25.3 ± 10.5 | 13.2 ± 4.8 | 1.6 ± 0.6 |
| | 25 | 24.4 ± 7.6 | 8.8 ± 2.8 | 1.8 ± 0.4 |
| | 27 | 16.7 ± 4.7 | | 1.9 ± 0.7 |
| Cryolife | 19 | | 9.0 ± 2.0 | 1.5 ± 0.3 |
| <i>Stentless</i> | 21 | | 6.6 ± 2.9 | 1.7 ± 0.4 |
| | 23 | | 6.0 ± 2.3 | 2.3 ± 0.2 |
| | 25 | | 6.1 ± 2.6 | 2.6 ± 0.2 |
| | 27 | | 4.0 ± 2.4 | 2.8 ± 0.3 |
| Edwards Duromedics | 21 | 39.0 ± 13 | | |
| <i>Bileaflet</i> | 23 | 32.0 ± 8.0 | | |
| | 25 | 26.0 ± 10.0 | | |
| | 27 | 24.0 ± 10.0 | | |
| Edwards Mira | 19 | | 18.2 ± 5.3 | 1.2 ± 0.4 |
| <i>Bileaflet</i> | 21 | | 13.3 ± 4.3 | 1.6 ± 0.4 |
| | 23 | | 14.7 ± 2.8 | 1.6 ± 0.6 |
| | 25 | | 13.1 ± 3.8 | 1.9 |
| Hancock | 21 | 18.0 ± 6.0 | 12.0 ± 2.0 | |
| <i>Stented porcine</i> | 23 | 16.0 ± 2.0 | 11.0 ± 2.0 | |
| | 25 | 15.0 ± 3.0 | 10.0 ± 3.0 | |
| Hancock II | 21 | | 14.8 ± 4.1 | 1.3 ± 0.4 |
| <i>Stented porcine</i> | 23 | 34.0 ± 13.0 | 16.6 ± 8.5 | 1.3 ± 0.4 |
| | 25 | 22.0 ± 5.3 | 10.8 ± 2.8 | 1.6 ± 0.4 |
| | 29 | 16.2 ± 1.5 | 8.2 ± 1.7 | 1.6 ± 0.2 |

Normal Dooler Echcardiographic Values for Prosthetic Aortic Valves
 (continued)

| Valve | Size | Peak gradient (mm Hg) | Mean gradient (mm Hg) | Effective orifice area (cm ²) |
|-------------------------|-------|--------------------------|--------------------------|--|
| | 17-19 | | 9.7 ± 4.2 | 4.2 ± 1.8 |
| | 19-21 | | | 5.4 ± 0.9 |
| | 20-21 | | 7.9 ± 4.0 | 3.6 ± 2.0 |
| | 20-22 | | 7.2 ± 3.0 | 3.5 ± 1.5 |
| Homograft | 22 | 1.7 ± 0.3 | | 5.8 ± 3.2 |
| <i>Homograft valves</i> | 22-23 | | 5.6 ± 3.1 | 2.6 ± 1.4 |
| | 22-24 | | | 5.6 ± 1.7 |
| | 24-27 | | 6.2 ± 2.6 | 2.8 ± 1.1 |
| | 26 | 1.4 ± 0.6 | | 6.8 ± 2.9 |
| | 25-28 | | | 6.2 ± 2.5 |
| Intact | 19 | 40.4 ± 15.4 | 24.5 ± 9.3 | |
| | 21 | 40.9 ± 15.6 | 19.6 ± 8.1 | 1.6 ± 0.4 |
| | 23 | 32.7 ± 9.6 | 19.0 ± 6.1 | 1.6 ± 0.4 |
| | 25 | 29.7 ± 15.0 | 17.7 ± 7.9 | 1.7 ± 0.3 |
| | 27 | 25.0 ± 7.6 | 15.0 ± 4.5 | |
| Ionescu-Shiley | 17 | 23.8 ± 3.4 | | 0.9 ± 0.1 |
| | 19 | 19.7 ± 5.9 | 13.3 ± 3.9 | 1.1 ± 0.1 |
| | 21 | 26.6 ± 9.0 | | |
| | 23 | | 15.6 ± 4.4 | |
| Labcor Santiago | 19 | 18.6 ± 5.0 | 11.8 ± 3.3 | 1.2 ± 0.1 |
| | 21 | 17.5 ± 6.6 | 8.2 ± 4.5 | 1.3 ± 0.1 |
| | 23 | 14.8 ± 5.2 | 7.8 ± 2.9 | 1.8 ± 0.2 |
| | 25 | 12.3 ± 3.4 | 6.8 ± 2.0 | 2.1 ± 0.3 |
| | 21 | 24.3 ± 8.1 | 13.3 ± 4.2 | 1.1 ± 0.3 |
| Labcor Synergy | 23 | 27.3 ± 13.7 | 15.3 ± 6.9 | 1.4 ± 0.4 |
| | 25 | 22.5 ± 11.9 | 13.2 ± 6.4 | 1.5 ± 0.4 |
| | 27 | 17.8 ± 7.0 | 10.6 ± 4.6 | 1.8 ± 0.5 |
| | 19 | 21.3 ± 10.8 | 11.8 ± 3.4 | 1.5 ± 0.2 |
| MCRI On-X | 21 | 16.4 ± 5.9 | 9.9 ± 3.6 | 1.7 ± 4.0 |
| | 23 | 15.9 ± 6.4 | 8.6 ± 3.4 | 1.9 ± 0.6 |
| | 25 | 16.5 ± 10.2 | 6.9 ± 4.3 | 2.4 ± 0.6 |
| | 23 | | 10.4 ± 3.1 | 2.2 ± 0.3 |
| Medtronic Advantage | 25 | | 9.0 ± 3.7 | 2.8 ± 0.6 |
| | 27 | | 7.6 ± 3.6 | 3.3 ± 0.7 |
| | 29 | | 6.1 ± 3.8 | 3.9 ± 0.7 |
| | 19 | 11.0 ± 4.0 | 13.0 ± 3.9 | |
| Medtronic Freestyle | 21 | | 9.1 ± 5.1 | 1.4 ± 0.3 |
| | 23 | | 8.1 ± 4.6 | 1.7 ± 0.5 |
| | 25 | | 5.3 ± 3.1 | 2.1 ± 0.5 |
| | 27 | | 4.6 ± 3.1 | 2.5 ± 0.1 |

Normal Dooler Echcardiographic Values for Prosthetic Aortic Valves
 (continued)

| Valve | Size | Peak gradient (mm Hg) | Mean gradient (mm Hg) | Effective orifice area (cm ²) |
|--|------|--------------------------|--------------------------|---|
| Medtronic Hall <i>Single tilting disc</i> | 20 | 34.4 ± 13.1 | 17.1 ± 5.3 | 1.2 ± 0.5 |
| | 21 | 26.9 ± 10.5 | 14.1 ± 5.9 | 1.1 ± 0.2 |
| | 23 | 26.9 ± 8.9 | 13.5 ± 4.0 | 1.4 ± 0.4 |
| | 25 | 17.1 ± 7.0 | 9.5 ± 4.3 | 1.5 ± 0.5 |
| | 27 | 18.9 ± 9.7 | 8.7 ± 5.6 | 1.9 ± 0.2 |
| Medtronic Mosaic <i>Stented porcine</i> | 21 | | 14.2 ± 5.0 | 1.4 ± 0.4 |
| | 23 | 23.8 ± 11.0 | 13.7 ± 4.8 | 1.5 ± 0.4 |
| | 25 | 22.5 ± 10.0 | 11.7 ± 5.1 | 1.8 ± 0.5 |
| | 27 | | 10.4 ± 4.3 | 1.9 ± 0.1 |
| | 29 | | 11.1 ± 4.3 | 2.1 ± 0.2 |
| Mitroflow <i>Stented bovine pericardial</i> | 19 | 18.6 ± 5.3 | 13.1 ± 3.3 | 1.1 ± 0.2 |
| Monostrut Bjork-Shiley <i>Single tilting disc</i> | 19 | | 27.4 ± 8.8 | |
| | 21 | 27.5 ± 3.1 | 20.5 ± 6.2 | |
| | 23 | 20.3 ± 0.7 | 17.4 ± 6.4 | |
| | 25 | | 16.1 ± 4.9 | |
| | 27 | | 11.4 ± 3.8 | |
| Prima <i>Stentless</i> | 21 | 28.8 ± 6.0 | 13.7 ± 1.9 | 1.4 ± 0.7 |
| | 23 | 21.5 ± 7.5 | 11.5 ± 4.9 | 1.5 ± 0.3 |
| | 25 | 22.1 ± 12.5 | 11.6 ± 7.2 | 1.8 ± 0.5 |
| Omnicarbon <i>Single tilting disc</i> | 21 | 37.4 ± 12.8 | 20.4 ± 5.4 | 1.3 ± 0.5 |
| | 23 | 28.8 ± 9.1 | 17.4 ± 4.9 | 1.5 ± 0.3 |
| | 25 | 23.7 ± 8.1 | 13.2 ± 4.6 | 1.9 ± 0.5 |
| | 27 | 20.1 ± 4.2 | 12.4 ± 2.9 | 2.1 ± 0.4 |
| | | | | |
| Omniscience <i>Single tilting disc</i> | 21 | 50.8 ± 2.8 | 28.2 ± 2.2 | 0.9 ± 0.1 |
| | 23 | 39.8 ± 8.7 | 20.1 ± 5.1 | 1.0 ± 0.1 |
| Starr Edwards <i>Caged ball</i> | 23 | 32.6 ± 12.8 | 22.0 ± 9.0 | 1.1 ± 0.2 |
| | 24 | 34.1 ± 10.3 | 22.1 ± 7.5 | 1.1 ± 0.3 |
| | 26 | 31.8 ± 9.0 | 19.7 ± 6.1 | |
| | 27 | 30.8 ± 6.3 | 18.5 ± 3.7 | |
| | 29 | 29.0 ± 9.3 | 16.3 ± 5.5 | |
| Sorin Bicarbon <i>Bileaflet</i> | 19 | 30.1 ± 4.5 | 16.7 ± 2.0 | 1.4 ± 0.1 |
| | 21 | 22.0 ± 7.1 | 10.0 ± 3.3 | 1.2 ± 0.4 |
| | 23 | 16.8 ± 6.1 | 7.7 ± 3.3 | 1.5 ± 0.2 |
| Sorin Pericarbon <i>Stentless</i> | 25 | 11.2 ± 3.1 | 5.6 ± 1.6 | 2.4 ± 0.3 |
| | 19 | 36.5 ± 9.0 | 28.9 ± 7.3 | 1.2 ± 0.5 |
| | 21 | 28.0 ± 13.3 | 23.8 ± 11.1 | 1.3 ± 0.6 |
| | 23 | 27.5 ± 11.5 | 23.2 ± 7.6 | 1.5 ± 0.5 |

Normal Dooler Echcardiographic Values for Prosthetic Aortic Valves
 (continued)

| Valve | Size | Peak gradient (mm Hg) | Mean gradient (mm Hg) | Effective orifice area (cm ²) |
|--------------------------|------|--------------------------|--------------------------|---|
| St. Jude Medical | 19 | 28.5 ± 10.7 | 17.0 ± 7.8 | 1.9 ± 0.1 |
| Haem Plus | 21 | 16.3 ± 17.0 | 10.6 ± 5.1 | 1.8 ± 0.5 |
| <i>Bileaflet</i> | 23 | 16.8 ± 7.3 | 12.1 ± 4.2 | 1.7 ± 0.5 |
| | 19 | 20.6 ± 12 | 11.0 ± 4.9 | 1.6 ± 0.4 |
| St Jude Medical Regent | 21 | 15.6 ± 9.4 | 8.0 ± 4.8 | 2.0 ± 0.7 |
| <i>Bileaflet</i> | 23 | 12.8 ± 6.8 | 6.9 ± 3.5 | 2.3 ± 0.9 |
| | 25 | 11.7 ± 6.8 | 5.6 ± 3.2 | 2.5 ± 0.8 |
| | 27 | 7.9 ± 5.5 | 3.5 ± 1.7 | 3.6 ± 0.5 |
| | 19 | 42.0 ± 10.0 | 24.5 ± 5.8 | 1.5 ± 0.1 |
| St Jude Medical Standard | 21 | 25.7 ± 9.5 | 15.2 ± 5.0 | 1.4 ± 0.4 |
| <i>Bileaflet</i> | 23 | 21.8 ± 7.5 | 13.4 ± 5.6 | 1.6 ± 0.4 |
| | 25 | 18.9 ± 7.3 | 11.0 ± 5.3 | 1.9 ± 0.5 |
| | 27 | 13.7 ± 4.2 | 8.4 ± 3.4 | 2.5 ± 0.4 |
| | 29 | 13.5 ± 5.8 | 7.0 ± 1.7 | 2.8 ± 0.5 |
| | 21 | 22.6 ± 14.5 | 10.7 ± 7.2 | 1.3 ± 0.6 |
| St Jude Medical | 23 | 16.2 ± 9.0 | 8.2 ± 4.7 | 1.6 ± 0.6 |
| <i>Stentless</i> | 25 | 12.7 ± 8.2 | 6.3 ± 4.1 | 1.8 ± 0.5 |
| | 27 | 10.1 ± 5.8 | 5.0 ± 2.9 | 2.0 ± 0.3 |
| | 29 | 7.7 ± 4.4 | 4.1 ± 2.4 | 2.4 ± 0.6 |

Normal Doppler Echocardiography Values for Prosthetic Mitral

| Valve | Size | Peak gradient (mm Hg) | Mean gradient (mm Hg) | Peak velocity (m/s) | Pressure half-time (ms) | Effective orifice area (cm ²) |
|---|------|--------------------------|--------------------------|------------------------|----------------------------|--|
| Biocor <i>Stentless bioprostheses</i> | 27 | 13 ± 1 | | | | |
| | 29 | 14 ± 2.5 | | | | |
| | 31 | 11.5 ± 0.5 | | | | |
| | 33 | 12 ± 0.5 | | | | |
| Bioflo pericardial <i>Stented bioprostheses</i> | 25 | 10 ± 2 | 6.3 ± 1.5 | | | 2.0 ± 0.1 |
| | 27 | 9.5 ± 2.6 | 5.4 ± 1.2 | | | 2.0 ± 0.3 |
| | 29 | 5.0 ± 2.8 | 3.6 ± 1.0 | | | 2.4 ± 0.2 |
| | 31 | 4.0 | 2.0 | | | 2.3 |
| Bjork - Shiley <i>Tilting disc</i> | 23 | | | 1.7 | 115 | |
| | 25 | 12 ± 4 | 6 ± 2 | 1.75 ± 0.38 | 99 ± 27 | 1.72 ± 0.6 |
| | 27 | 10 ± 4 | 5 ± 2 | 1.60 ± 0.49 | 89 ± 28 | 1.81 ± 0.54 |
| | 29 | 7.83 ± 2.93 | 2.83 ± 1.27 | 1.37 ± 0.25 | 79 ± 17 | 2.10 ± 0.43 |
| | 31 | 6 ± 3 | 2.0 ± 1.9 | 1.41 ± 0.26 | 70 ± 14 | 2.2 ± 0.3 |
| Bjork-Shiley monostrut <i>Tilting disc</i> | 23 | | 5.0 | 1.9 | | |
| | 25 | 13 ± 2.5 | 5.57 ± 2.3 | 1.8 ± 0.3 | | |
| | 27 | 12 ± 2.5 | 4.53 ± 2.2 | 1.7 ± 0.4 | | |
| | 29 | 13 ± 3 | 4.26 ± 1.6 | 1.6 ± 0.3 | | |
| | 31 | 14 ± 4.5 | 4.9 ± 1.6 | 1.7 ± 0.3 | | |
| Carbomedics <i>Bileaflet</i> | 23 | | | 1.9 ± 0.1 | 126 ± 7 | |
| | 25 | 10.3 ± 2.3 | 3.6 ± 0.6 | 1.3 ± 0.1 | 93 ± 8 | 2.9 ± 0.8 |
| | 27 | 8.79 ± 3.46 | 3.46 ± 1.03 | 1.61 ± 0.30 | 89 ± 20 | 2.9 ± 0.75 |
| | 29 | 8.78 ± 2.9 | 3.39 ± 0.97 | 1.52 ± 0.30 | 88 ± 17 | 2.3 ± 0.4 |
| | 31 | 8.87 ± 2.34 | 3.32 ± 0.87 | 1.61 ± 0.29 | 92 ± 24 | 2.8 ± 1.14 |
| Carpentier-Edwards <i>Stented bioprostheses</i> | 33 | 8.8 ± 2.2 | 4.8 ± 2.5 | 1.5 ± 0.2 | 93 ± 12 | |
| | 27 | | 6 ± 2 | 1.7 ± 0.3 | 98 ± 28 | |
| | 29 | | 4.7 ± 2.0 | 1.76 ± 0.27 | 92 ± 14 | |
| | 31 | | 4.4 ± 2.0 | 1.54 ± 0.15 | 92 ± 19 | |
| | 33 | | 6 ± 3 | | 93 ± 12 | |
| Carpentier-Edwards pericardial <i>Stented Bioprostheses</i> | 27 | | 3.6 | 1.6 | 100 | |
| | 29 | | 5.25 ± 2.36 | 1.67 ± 0.3 | 110 ± 15 | |
| | 31 | | 4.05 ± 0.83 | 1.53 ± 0.1 | 90 ± 11 | |
| | 33 | | 1.0 | 0.8 | 80 | |
| | 27 | 13 ± 6 | 5 ± 3 | 1.61 ± 0.4 | 75 ± 12 | |
| Duromedics <i>Bileaflet</i> | 29 | 10 ± 4 | 3 ± 1 | 1.40 ± 0.25 | 85 ± 22 | |
| | 31 | 10.5 ± 4.33 | 3.3 ± 1.36 | 1.38 ± 0.27 | 81 ± 12 | |
| | 33 | 11.2 | 2.5 | | 85 | |
| | 27 | 10 ± 4 | 5 ± 2 | | | 1.3 ± 0.8 |
| Hancock I or not specified <i>Stented bioprostheses</i> | 29 | 7 ± 3 | 2.46 ± 0.79 | | 115 ± 20 | 1.5 ± 0.2 |
| | 31 | 4.00 ± 0.86 | 4.86 ± 1.69 | | 95 ± 17 | 1.6 ± 0.2 |
| | 33 | 3 ± 2 | 3.87 ± 2.00 | | 90 ± 12 | 1.9 ± 0.2 |

Normal Doppler Echocardiography Values for Prosthetic Mitral (continued)

| Valve | Size | Peak gradient (mm Hg) | Mean gradient (mm Hg) | Peak velocity (m/s) | Pressure half-time (ms) | Effective orifice area (cm ²) |
|--|------|--------------------------|--------------------------|------------------------|----------------------------|--|
| Hancock II <i>Stented bioprosthesis</i> | 27 | | | | | 2.21 ± 0.14 |
| | 29 | | | | | 2.77 ± 0.11 |
| | 31 | | | | | 2.84 ± 0.10 |
| | 33 | | | | | 3.15 ± 0.22 |
| Hancock pericardial <i>Stented bioprosthesis</i> | 29 | | 2.61 ± 1.39 | 1.42 ± 0.14 | 105 ± 36 | |
| | | | 3.57 ± 1.02 | 1.51 ± 0.27 | 81 ± 23 | |
| | 31 | | 4.87 ± 1.08 | 1.43 ± 0.15 | 93 ± 11 | |
| | | | 3.21 ± 0.82 | 1.31 ± 0.24 | 100 ± 28 | |
| Ionescu-Shiley <i>Stented bioprosthesis</i> | 29 | | 3.22 ± 0.57 | 1.38 ± 0.20 | 85 ± 8 | |
| | | | 3.63 ± 0.9 | 1.45 ± 0.06 | 100 ± 36 | |
| | 25 | | 4.87 ± 1.08 | 1.43 ± 0.15 | 93 ± 11 | |
| | 27 | | 3.21 ± 0.82 | 1.31 ± 0.24 | 100 ± 28 | |
| Ionescu-Shiley low profile <i>Stented bioprosthesis</i> | 29 | | 3.22 ± 0.57 | 1.38 ± 0.20 | 85 ± 8 | |
| | | | 3.63 ± 0.90 | 1.45 ± 0.06 | 100 ± 36 | |
| | 29 | | 3.31 ± 0.96 | 1.36 ± 0.25 | 80 ± 30 | |
| | 31 | | 2.74 ± 0.37 | 1.33 ± 0.14 | 79 ± 15 | |
| Labcor-Santiago pericardial <i>Stented bioprosthesis</i> | 25 | 8.7 | 4.5 | | 97 | 2.2 |
| | 27 | 5.6 ± 2.3 | 2.8 ± 1.5 | | 85 ± 18 | 2.12 ± 0.48 |
| | 29 | 6.2 ± 2.1 | 3.0 ± 1.3 | | 80 ± 34 | 2.11 ± 0.73 |
| Lillehei-Kaster <i>Tilting disc</i> | 18 | | | 1.7 | 140 | |
| | 20 | | | 1.7 | 67 | |
| | 22 | | | 1.56 ± 0.09 | 94 ± 22 | |
| | 25 | | | 1.38 ± 0.27 | 124 ± 46 | |
| Medtronic-Hall <i>Tilting disc</i> | 27 | | | 1.4 | 78 | |
| | 29 | | | 1.57 ± 0.10 | 69 ± 15 | |
| | 31 | | | 1.45 ± 0.12 | 77 ± 17 | |
| Medtronic Intact Porcine <i>Stented bioprosthesis</i> | 29 | | 3.5 ± 0.51 | 1.60 ± 0.22 | | |
| | 31 | | 4.20 ± 1.44 | 1.60 ± 0.26 | | |
| | 33 | | 4.0 ± 1.3 | 1.40 ± 0.24 | | |
| | 35 | | 3.2 ± 1.77 | 1.3 ± 0.5 | | |
| Mitroflow <i>Stented bioprosthesis</i> | 25 | | 6.9 | 2.0 | 90 | |
| | 27 | | 3.07 ± 0.91 | 1.5 | 90 ± 20 | |
| | 29 | | 3.5 ± 1.65 | 1.43 ± 0.29 | 102 ± 21 | |
| | 31 | | 3.85 ± 0.81 | 1.32 ± 0.26 | 91 ± 22 | |
| Omnicarbon <i>Tilting disc</i> | 23 | | 8.0 | | | |
| | 25 | | 6.05 ± 1.81 | 1.77 ± 0.24 | 102 ± 16 | |
| | 27 | | 4.89 ± 2.05 | 1.63 ± 0.36 | 105 ± 33 | |
| | 29 | | 4.93 ± 2.16 | 1.56 ± 0.27 | 120 ± 40 | |
| | 31 | | 4.18 ± 1.4 | 1.30 ± 0.23 | 134 ± 31 | |
| | 33 | | 4 ± 2 | | | |

Normal Doppler Echocardiography Values for Prosthetic Mitral (continued)

| Valve | Size | Peak gradient (mm Hg) | Mean gradient (mm Hg) | Peak velocity (m/s) | Pressure half-time (ms) | Effective orifice area (cm ²) |
|---|-------|--------------------------|--------------------------|------------------------|----------------------------|--|
| On-X <i>Bileaflet</i> | 25 | 11.5 ± 3.2 | 5.3 ± 2.1 | | | 1.9 ± 1.1 |
| | 27-29 | 10.3 ± 4.5 | 4.5 ± 1.6 | | | 2.2 ± 0.5 |
| | 31-33 | 9.8 ± 3.8 | 4.8 ± 2.4 | | | 2.5 ± 1.1 |
| Sorin Allcarbon <i>Tilting disc</i> | 25 | 15 ± 3 | 5 ± 1 | 2.0 ± 0.2 | 105 ± 29 | 2.2 ± 0.6 |
| | 27 | 13 ± 2 | 4 ± 1 | 1.8 ± 0.1 | 89 ± 14 | 2.5 ± 0.5 |
| | 29 | 10 ± 2 | 4 ± 1 | 1.6 ± 0.2 | 85 ± 23 | 2.8 ± 0.7 |
| | 31 | 9 ± 1 | 4 ± 1 | 1.6 ± 0.1 | 88 ± 27 | 2.8 ± 0.9 |
| Sorin Bicarbon <i>Bileaflet</i> | 25 | 15.00 ± 0.25 | 4.0 ± 0.5 | 1.95 ± 0.02 | 70 ± 1 | |
| | 27 | 11.00 ± 2.75 | 4.0 ± 0.5 | 1.65 ± 0.21 | 82 ± 20 | |
| | 29 | 12 ± 3 | 4.0 ± 1.25 | 1.73 ± 0.22 | 80 ± 14 | |
| | 31 | 10.0 ± 1.5 | 4 ± 1 | 1.66 ± 0.11 | 83 ± 14 | |
| St Jude Medical <i>Bileaflet</i> | 23 | | 4.0 | 1.5 | 160 | 1.0 |
| | 25 | | 2.5 ± 1.0 | 1.34 ± 1.12 | 75 ± 4 | 1.35 ± 0.17 |
| | 27 | 11 ± 4 | 5.00 ± 1.82 | 1.61 ± 0.29 | 75 ± 10 | 1.67 ± 0.17 |
| | 29 | 10 ± 3 | 4.15 ± 1.80 | 1.57 ± 0.29 | 85 ± 10 | 1.75 ± 0.24 |
| | 31 | 12 ± 6 | 4.46 ± 2.22 | 1.59 ± 0.33 | 74 ± 13 | 2.03 ± 0.32 |
| Starr-Edwards <i>Caged ball</i> | 26 | | 10.0 | | | 1.4 |
| | 28 | | 7.00 ± 2.75 | | | 1.9 ± 0.57 |
| | 30 | 12.2 ± 4.6 | 6.99 ± 2.50 | 1.7 ± 0.3 | 125 ± 25 | 1.65 ± 0.4 |
| | 32 | 11.5 ± 4.2 | 5.08 ± 2.5 | 1.7 ± 0.3 | 110 ± 25 | 1.98 ± 0.40 |
| | 34 | | 5.0 | | | 2.6 |
| Stentless quadrileaflet bovine pericardial | 26 | | 2.2 ± 1.7 | 1.6 | 103 ± 31 | 1.7 |
| <i>Stented bioprosthesis</i> | 28 | | | 1.58 ± 0.25 | | 1.7 ± 0.6 |
| | 30 | | | 1.42 ± 0.32 | | 2.3 ± 0.4 |
| Wessex <i>Stented bioprosthesis</i> | 29 | | 3.69 ± 0.61 | 1.66 ± 0.17 | 83 ± 19 | |
| | 31 | | 3.31 ± 0.83 | 1.41 ± 0.25 | 80 ± 21 | |