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</table>
| PATH-CHF Pacing Therapies in Congestive Heart Failure | Guidant | Completed 1998 | Europe | NYHA class II-IV  
QRS > 120 ms  
Sinus rate > 55 bpm | 42 | Improvement in functional capacity  
Peak VO2  
Peak VO2 at anaerobic threshold  
6-minute walk distance | Improvement in quality of life  
Minnesota Living with Heart Failure Score  
Hospitalization  
NYHA class | Showed that CRT improves functional capacity, QOL and functional status. |
| MUSTIC SR Multi-site Stimulation In Cardiomyopathy Sinus Rhythm | Medtronic | Completed 2000 | Europe | NYHA class III-IV  
LVEDD > 60 mm  
QRS > 150 ms with sinus rhythm  
6-minute walk < 450 meters  
EF < 35% | 137 | Efficacy of CRT  
6-minute walk distance  
QOL  
NYHA class | Improvement in quality of life  
Hospitalization  
Peak VO2 | Provided MDT with BiV results to pursue larger trials. |
| MUSTIC AF Multi-site Stimulation In Cardiomyopathy - Atrial Fibrillation | Medtronic | Completed 2000 | Europe | NYHA class III-IV  
LVEDD > 60 mm  
QRS > 200 ms with AF  
6-minute walk < 450 meters  
EF < 35% | 137 | Efficacy of CRT  
6-minute walk distance  
QOL  
NYHA class | Improvement in quality of life  
Hospitalization  
Peak VO2 | Provided MDT with BiV results to pursue larger trials in atrial fibrillation (AF) patients needing CRT. |
| InSync (device name) | Medtronic | Completed 1999 | Europe Canada | NYHA class III-IV  
EF < 35%  
QRS > 150 ms  
LVEDD > 60 mm  
Pacing indications allowed | 103 | Improvement in functional capacity  
QRS width  
6-minute walk distance | Improvement in quality of life  
Minnesota Living with Heart Failure Score  
NYHA class | Showed that CRT improves functional capacity, QOL and functional status. |
# More Cardiac Resynchronization Therapy Studies

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<tr>
<td>InSync ICD (device name)</td>
<td>Medtronic</td>
<td>Completed 2000</td>
<td>Europe</td>
<td>NYHA class II-IV ▪ QRS &gt;130 ms ▪ EF &lt; 35% ▪ LVEDD &gt; 55 mm</td>
<td>84</td>
<td>Safety and effectiveness of ICD+CRT</td>
<td>Improvement in quality of life</td>
<td>CRT-D is safe to use in HF patients in Europe. Improvement in endpoints for NYHA class III-IV, not NYHA class II.</td>
</tr>
<tr>
<td>BELIEVE* Bi- versus Left Ventricular Pacing an Italian Evaluation on HF Patients with Ventricular Arrhythmias</td>
<td>Medtronic</td>
<td>Not available</td>
<td>Europe</td>
<td>ICD indicated ▪ NYHA class II-IV ▪ LBBB ▪ QRS &gt; 130 ms ▪ EF &lt; 35% ▪ LVEDD &gt; 55 mm</td>
<td>74</td>
<td>Efficacy of BiV vs. LV only pacing</td>
<td>Not available</td>
<td>* Europe only Indication LV-only CRT in ICD + HF Product Testing feature of next generation CRT-D</td>
</tr>
<tr>
<td>PAVE Post AV Nodal Ablation Evaluation</td>
<td>St.Jude Medical</td>
<td>2002</td>
<td>U.S.</td>
<td>Post AV nodal ablation ▪ 3 months stable medical therapy ▪ Capable of 6-minute walk ▪ NYHA class II-III</td>
<td>650</td>
<td>AF patients benefit from CRT (LV or BiV pacing) over RV pacing (current standard of care) Aescula lead performance ▪ 6-minute walk distance ▪ QOL</td>
<td>Improvement in quality of life</td>
<td>Indication CRT (BiV and/or LV) in HF + AF Products Frontier 3x2 device, Model 5510 Aescula CS lead</td>
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* European only

### Notes
- **InSync ICD**
- **BELIEVE**
- **PAVE**
- **nst AV Nodal Ablation Evaluation**

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<tr>
<td>LV3P</td>
<td>St. Jude Medical</td>
<td>Not available</td>
<td>World-wide</td>
<td>HF with pacemaker indication</td>
<td>NA</td>
<td>Efficacy of LV vs. RV pacing for bradycardic HF patients &lt;br&gt; 6-minute walk distance</td>
<td>Improvement in quality of life &lt;br&gt; - Minnesota Living with Heart Failure Score</td>
<td>Indication CRT (LV-only) in HF + brady Products Frontier 3x2 device, Model 5510 Aescula CS lead</td>
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<tr>
<td>DEFINITE</td>
<td>St. Jude Medical</td>
<td>Not available</td>
<td>U.S.</td>
<td>&lt;br&gt; - Non-ischemic dilated cardiomyopathy &lt;br&gt; - NYHA class II-III &lt;br&gt; - EF &lt; 35% &lt;br&gt; - NSVT on Holter or telemetry OR &gt; 10 PVCs/hour on Holter</td>
<td>408</td>
<td>Total mortality</td>
<td>Quality of life &lt;br&gt; Cost effectiveness &lt;br&gt; Appropriate ICD discharges for sustained VT/VF</td>
<td>*** This is NOT a CRT trial. Indication ICD in non-ischemic dilated cardiomyopathy HF pts. with low EF and nonsustained arrhythmias Products Photon ICD</td>
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<td>Defibrillators In Non-Ischemic Cardiomyopathy Treatment Evaluation</td>
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<td>VecTor</td>
<td>St. Jude Medical</td>
<td>Not available</td>
<td>World-wide</td>
<td>&lt;br&gt; - NYHA class II-IV &lt;br&gt; - EF &lt; 35% &lt;br&gt; - QRS &gt; 140 ms &lt;br&gt; - LVEDD &gt; 54 mm</td>
<td>420</td>
<td>Efficacy of BiV pacing vs. optimal drug therapy (current standard of care) &lt;br&gt; Mortality &lt;br&gt; 6-minute walk distance &lt;br&gt; Echo measurements</td>
<td>Improvement in quality of life &lt;br&gt; - Minnesota Living with Heart Failure Score</td>
<td>Indication CRT in HF Products Frontier 3x2 device, Model 5510 Aescula CS lead</td>
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