

SOLARA™ CRT-P MRI SURESCAN™

Model W1TR03

Heart Failure Management Report

This report provides an overview of the patient's condition over the short and long term, with a focus on heart failure management. The report includes graphs that show OptiVol™ 2.0 fluid trends and trends related to heart failure over the last 14 months.

Physical characteristics

| | |
|---|--|
| Volume ^a | 19.9 cm ³ |
| Mass | 30 g |
| H x W x D ^b | 59 mm x 46.5 mm x 11 mm |
| Radiopaque ID ^c | RNP |
| Surface area of titanium device can | 34.8 cm ² |
| Materials in contact with human tissue ^d | Titanium, polyurethane, silicone rubber |
| Battery | Lithium-hybrid CFx silver vanadium oxide |

^a Volume with connector holes unplugged.

^b Grommets may protrude slightly beyond the can surface.

^c The radiopaque ID, which includes a Medtronic-identifier symbol, can be viewed in a fluoroscopic image of the device.

^d These materials have been successfully tested for the ability to avoid biological incompatibility. The device does not produce an injurious temperature in the surrounding tissue during normal operation.

Replacement indicators

| | |
|--------------------------------------|--|
| Recommended Replacement Time (RRT) | 180 days after 3 consecutive daily automatic measurements of ≤ 2.63 V or immediately after 3 consecutive daily automatic measurements of ≤ 2.60 V, whichever comes first |
| Elective Replacement Indicator (ERI) | 3 months after RRT |
| End of Service (EOS) | 3 months after ERI |



- MR Conditional with SureScan™ Technology
- Bluetooth® Wireless Telemetry *
- CardioSync™ Optimization
- OptiVol™ 2.0 Fluid Status Monitoring
- MVP™ Mode
- Complete Capture Management™ Diagnostic (ACM, RVCM, LVCM)

*Bluetooth® enabled CareLink™ remote monitors will be available pending FDA submission and approval.

Medtronic

Tachyarrhythmia detection parameters

Tachyarrhythmia detection parameters

| Parameter | Programmable values |
|---|--|
| AT/AF Detection | On; Monitor \diamond |
| Zones | 1 \diamond ; 2 |
| AT/AF Interval (Rate) ^a | 150; 160 ... 350 \diamond ... 450 ms |
| Fast AT/AF Interval (Rate) ^a | 150; 160 ... 200 \diamond ... 250 ms |
| VT Monitor | Monitor \diamond ; Off |
| VT Monitor Interval (Rate) ^a | 280; 290 ... 400 \diamond ... 500 ms |
| RV Sensitivity ^b | 0.45; 0.60 mV (\pm 50%); 0.90; 1.20; 2.00; 2.80; 4.00; 5.60; 8.00; 11.30 mV (\pm 30%) Bipolar: 0.9 \diamond mV Unipolar: 2.80 \diamond mV |
| Atrial Sensitivity ^c | 0.15 mV (\pm 75%); 0.30; 0.45; 0.60 mV (\pm 50%); 0.90; 1.20; 1.5; 1.8; 2.1; 4.0 mV (\pm 30%); Off Bipolar: 0.3 \diamond mV Unipolar: 0.45 \diamond mV |

^a The measured intervals are truncated to a 10 ms multiple (for example, 457 ms becomes 450 ms). The device uses this truncated interval value when applying the programmed criteria and calculating interval averages.

^b The device complies with the requirements of ISO 14708-2 when the sensitivity threshold is programmed to 2.0 mV or higher.

^c The device complies with the requirements of ISO 14708-2 when the sensitivity threshold is programmed to 1.8 mV or higher.

Atrial tachyarrhythmia therapy parameters

| Parameter | Programmable values |
|-------------------------------|---|
| Antitachy Pacing (ATP) | |
| Fast AT/AF Rx Status | On; Off \diamond |
| Therapy Type | Ramp; Burst+ Rx1: Ramp \diamond ; Rx2: Burst+ \diamond ; Rx3: Ramp \diamond |
| AT/AF Rx Status | On; Off \diamond |
| Therapy Type | Ramp; Burst+ Rx1: Ramp \diamond ; Rx2: Burst+ \diamond ; Rx3: Ramp \diamond |

Burst+ parameters

| | |
|---------------------|--|
| Initial # S1 Pulses | 1; 2; 3 ... 11 \diamond ... 15; 20; 25 |
| A-S1 Interval (%AA) | 28; 31; 34; 38; 41 ... 59; 63; 66; 69 ... 84 \diamond ; 88; 91; 94; 97% |
| S1-S2 (%AA) | 28; 31; 34; 38; 41 ... 59; 63; 66; 69 ... 81 \diamond ; 84; 88; 91; 94; 97%; Off |
| S2-S3 Decrement | 0; 10; 20 \diamond ... 80 ms; Off |
| Interval Decrement | 0; 10 \diamond ; 20; 30; 40 ms |
| # Sequences | 1; 2; 3 ... 10 \diamond |

Ramp parameters

| | |
|---------------------|--|
| Initial # S1 Pulses | 1; 2; 3 ... 13 \diamond ; 14; 15; 20; 25 |
| A-S1 Interval (%AA) | |
| Rx1 | 28; 31; 34; 38; 41 ... 59; 63; 66 ... 84; 88; 91 \diamond ; 94; 97% |

| | |
|--------------------|--|
| Rx2 | 28; 31; 34; 38; 41 ... 59; 63; 66 ... 84; 88; 91 \diamond ; 94; 97% |
| Rx3 | 28; 31; 34; 38; 41 ... 59; 63; 66 ... 81 \diamond ; 84; 88; 91; 94; 97% |
| Interval Decrement | 0; 10 \diamond ... 40 ms |
| # Sequences | 1; 2 ... 8; 9; 10 \diamond |

Stop Atrial Rx after (Shared)

| | |
|---|-------------------------------------|
| Rx/Lead Suspect ... | |
| Disable Atrial ATP if it accelerates V. rate? | Yes \diamond ; No |
| Disable all atrial therapies if atrial lead position is suspect? (Atrial Lead Position Check) | Yes \diamond ; No |
| Duration to stop | 12; 24; 48 \diamond ; 72 hr; None |

Episode Duration before Rx Delivery

| | |
|-----------------------------|---|
| Episode Duration before ATP | 0; 1 \diamond ; 2 ... 5; 7; 10; 15; 20; 25; 30; 40; 50 min; 1; 2; 3; 4; 5; 6; 12; 24 hr |
|-----------------------------|---|

Reactive ATP™

| | |
|---------------|---|
| Rhythm Change | On \diamond ; Off |
| Time Interval | Off \diamond ; 2; 4; 7; 12; 24; 36; 48 hr |

Shared A. ATP

| | |
|---------------------------------------|---|
| A-A Minimum ATP Interval ^a | 100; 110 ... 150 \diamond ... 400 ms (\pm 6 ms) |
| A. Pacing Amplitude | 1; 2 V (+0.5 V/-33%) 3; 4; 5; 6 \diamond ; 8 V (+20%/-33%) |
| A. Pacing Pulse Width | 0.1; 0.2 ... 1.5 \diamond ms (\pm 25 μ s) |
| VVI Backup Pacing | Off; On (Always); On (Auto-Enable) \diamond |
| VVI Backup Pacing Rate | 60; 70 \diamond ... 120 bpm |

^a The measured intervals are truncated to a 10 ms multiple (for example, 457 ms becomes 450 ms). The device uses this truncated interval value when applying the programmed criteria and calculating interval averages.

Pacing Parameters

Modes, rates, and intervals

| Parameter | Programmable values |
|---------------------------|---|
| Mode | DDDR; DDD \diamond ; AAIR \Leftrightarrow DDDR; AAI \Leftrightarrow DDD; DDIR; DDI; AAIR; AAI; VVIR; VVI; DOO; AOO; VOO; ODO |
| Mode Switch | On \diamond ; Off |
| Lower Rate ^a | 30; 35 ... 60 \diamond ; 70; 75 ... 150 bpm (\pm 2 bpm) |
| Upper Tracking Rate | 80; 85 ... 130 \diamond ... 175 bpm (\pm 2 bpm); 180; 190 ... 210 bpm (+2/-11 bpm) |
| Paced AV ^b | 30; 40 ... 130 \diamond ... 350 ms (\pm 4 ms) |
| Sensed AV ^b | 30; 40 ... 100 \diamond ... 350 ms (+30; -2 ms) |
| Maximum AV Interval Limit | Off \diamond ; 250; 260 ... 500 ms |

Modes, rates, and intervals, cont'd.

| Parameter | Programmable values |
|----------------------|---|
| PVARP | Auto \diamond ; 150; 160 ... 500 ms (+5; -30 ms) |
| Minimum PVARP | 150; 160 ... 250 \diamond ... 500 ms (+5; -30 ms) |
| A. Refractory Period | 150; 160 ... 310 \diamond ... 500 ms (+5; -30 ms) |

^a The corresponding Lower Rate interval can be calculated as follows: Lower Rate interval (ms) = 60,000/Lower Rate.

Atrial parameters

| Parameter | Programmable values |
|-----------------------|--|
| Atrial Amplitude | 0.5; 0.75 ... 1.25 V (+0.125 V/-33%) 1.50 ... 3.5 \diamond ... 5; 5.5; 6; 8 V (+15%/-33%) ^a |
| Atrial Pulse Width | 0.03; 0.06 ms (\pm 10 μ s); 0.1; 0.2; 0.3; 0.4 \diamond ... 1.5 ms (\pm 25 μ s) |
| Atrial Sensitivity | Off; 0.15; 0.3; 0.45; 0.6 mV (\pm 60%); 0.9; 1.2; 1.5; 1.8; 2.1; 4.0 mV (\pm 40%) Unipolar: 0.45 \diamond mV Bipolar: 0.3 \diamond mV |
| Atrial Pace Polarity | Bipolar; Unipolar |
| Atrial Sense Polarity | Bipolar; Unipolar |
| Atrial Lead Monitor | Monitor Only; Adaptive |
| Min Limit | 200 \diamond ; 300; 400; 500 Ω |
| Max Limit | 1,000; 1,500; 2,000; 3,000 \diamond Ω |

^a When Atrial Amplitude is 8 V, Atrial Pulse Width must be less than 1.3 ms.

RV parameters

| Parameter | Programmable values |
|-------------------|---|
| RV Amplitude | 0.5; 0.75 ... 1.25 V (+0.125 V/-33%) 1.50 ... 3.5 \diamond ... 5; 5.5; 6; 8 V (+15%/-33%) ^a |
| RV Pulse Width | 0.03; 0.06 ms (\pm 10 μ s); 0.1; 0.2; 0.3; 0.4 \diamond ... 1.5 ms (\pm 25 μ s) |
| RV Sensitivity | 0.45; 0.60; 0.90; 1.20; 2.00; 2.80; 4.00; 5.60; 8.00; 11.30 mV (\pm 55%) Unipolar: 2.80 \diamond mV Bipolar: 0.90 \diamond mV |
| RV Pace Polarity | Bipolar; Unipolar |
| RV Sense Polarity | Bipolar; Unipolar |
| RV Lead Monitor | Monitor Only; Adaptive |
| Min Limit | 200 \diamond ; 300; 400; 500 Ω |
| Max Limit | 1,000; 1,500; 2,000; 3,000 \diamond Ω |

^a When RV Amplitude is 8 V, RV Pulse Width must be less than 1.3 ms.

LV parameters

| Parameter | Programmable values |
|------------------|---|
| LV Amplitude | 0.5; 0.75 ... 1.25 V (+0.125 V/-33%) 1.50 ... 3.5 \diamond ... 5; 5.5; 6; 8 V (+15% -33%) ^a |
| LV Pulse Width | 0.03; 0.06 ms (\pm 10 μ s); 0.1; 0.2; 0.3; 0.4 \diamond ... 1.5 ms (\pm 25 μ s) |
| LV Pace Polarity | LVtip to RVring; LVtip to Can; LVring to RVring; LVring to Can; LVtip to LVring |
| LV Lead Monitor | Monitor Only; Adaptive |
| Min Limit | 200 \diamond ; 300; 400; 500 Ω |
| Max Limit | 1,000; 1,500; 2,000; 3,000 \diamond Ω |

^a When LV Amplitude is 8 V, LV Pulse Width must be less than 1.3 ms.

CRT pacing parameters

| Parameter | Programmable values |
|--------------------------|---|
| V. Pacing | RV; RV \rightarrow LV; LV \rightarrow RV \diamond |
| V-V Pace Delay | 0 \diamond ; 10 ... 80 ms |
| V. Sense Response | On \diamond ; Off |
| Maximum Rate | 95; 100 ... 130 \diamond ... 150 bpm |
| Atrial Tracking Recovery | On \diamond ; Off |

Atrial Capture Management™ parameters

| Parameter | Programmable values |
|----------------------------------|--|
| Atrial Capture Management™ | Adaptive \diamond ; Monitor; Off |
| Atrial Amplitude Safety Margin | 1.5x; 2.0x \diamond ; 2.5x; 3.0x |
| Atrial Minimum Adapted Amplitude | 1.0; 1.5 \diamond ; 2.0; 2.5; 3.0; 3.5 V |
| Atrial Acute Phase Remaining | Off; 30; 60; 90; 120 \diamond ; 150 days |

RV Capture Management™ parameters

| Parameter | Programmable values |
|------------------------------|--|
| RV Capture Management™ | Adaptive \diamond ; Monitor; Off |
| RV Amplitude Safety Margin | 1.5x; 2.0x \diamond ; 2.5x; 3.0x |
| RV Minimum Adapted Amplitude | 1.0; 1.5; 2.0 \diamond ; 2.5; 3.0; 3.5 V |
| RV Acute Phase Remaining | Off; 30; 60; 90; 120 \diamond ; 150 days |

LV Capture Management™ parameters

| Parameter | Programmable values |
|------------------------------|--|
| LV Capture Management™ | Adaptive \diamond ; Monitor; Off |
| LV Amplitude Safety Margin | +Auto \diamond ; +0.5; +1.0; +1.5; +2.0; +2.5 V |
| LV Maximum Adapted Amplitude | 0.5; 0.75 ... 5.0; 5.5; 6 \diamond V |

Blanking periods

| Parameter | Programmable values |
|------------------|---|
| PVAB Interval | 10 ^a ; 20 ... 100; 110; 120 ... 150 ⬇️ ... 300 ms |
| PVAB Method | Partial ⬇️; Partial+; Absolute |
| A. Blank Post AP | 150; 160 ... 200 ⬇️ ... 250 ms (± 5 ms) |
| A. Blank Post AS | 100 ⬇️; 110 ... 170 ms (± 2 ms) |
| V. Blank Post VP | 150; 160 ... 230 ⬇️ ... 320 ms (± 5 ms) |
| V. Blank Post VS | 120 ⬇️; 130 ... 170; 200; 220; 250; 280; 300; 320 ms (± 2 ms) |

^aIf the PVAB Method is set to Partial, the minimum selectable value for the PVAB Interval is 100 ms.

Rate response pacing parameters

| Parameter | Programmable values |
|------------------------------|--|
| Rates | |
| ADL Rate | 60; 65 ... 95 ⬇️ ... 170 bpm (± 2 bpm) |
| Upper Sensor | 80; 85 ... 120 ⬇️ ... 175 bpm (± 2 bpm) |
| Rate Profile Optimization | On ⬇️; Off |
| Adjust Rate Response | |
| ADL Response | 1; 2; 3 ⬇️; 4; 5 |
| Exertion Response | 1; 2; 3 ⬇️; 4; 5 |
| Additional Parameters | |
| Activity Threshold | Low ⬇️; Medium Low; Medium High; High |
| Activity Acceleration | 15; 30 ⬇️; 60 s |
| Activity Deceleration | Exercise ⬇️; 2.5; 5; 10 min |
| ADL Set Point | 5; 6 ... 40; 42 ... 80 |
| UR Set Point | 15; 16 ... 40; 42 ... 80; 85 ... 180 |

Rate adaptive AV parameters

| Parameter | Programmable values |
|-------------------|-------------------------------|
| Rate Adaptive AV | On ⬇️; Off |
| Start Rate | 50; 55 ... 90 ⬇️ ... 145 bpm |
| Stop Rate | 55; 60 ... 130 ⬇️ ... 175 bpm |
| Minimum Paced AV | 30; 40 ... 100 ⬇️ ... 200 ms |
| Minimum Sensed AV | 30; 40 ... 70 ⬇️ ... 200 ms |

Atrial rate stabilization parameters

| Parameter | Programmable values |
|-------------------------------|-------------------------------|
| A. Rate Stabilization | On; Off ⬇️ |
| Maximum Rate | 80; 85 ... 100 ⬇️ ... 150 bpm |
| Interval Percentage Increment | 12.5; 25 ⬇️; 50% |

Atrial Preference Pacing parameters

| Parameter | Programmable values |
|----------------------|-------------------------------|
| A. Preference Pacing | On; Off ⬇️ |
| Maximum Rate | 80; 85 ... 100 ⬇️ ... 150 bpm |
| Interval Decrement | 30 ⬇️; 40; 50 ... 100; 150 ms |
| Search Beats | 5; 10; 15; 20 ⬇️ ... 25; 50 |

Post Mode Switch Overdrive Pacing (PMOP) parameters

| Parameter | Programmable values |
|--------------------|--|
| Post Mode Switch | On; Off ⬇️ |
| Overdrive Rate | 70; 75; 80 ⬇️ ... 120 bpm |
| Overdrive Duration | 0.5; 1; 2; 3; 5 ⬇️; 10; 20; 30; 60; 90; 120 min |

Conducted AF response parameters

| Parameter | Programmable values |
|-----------------------|-------------------------------|
| Conducted AF Response | On ⬇️; Off |
| Response Level | Low; Medium ⬇️; High |
| Maximum Rate | 80; 85 ... 110 ⬇️ ... 130 bpm |

Ventricular rate stabilization parameters

| Parameter | Programmable values |
|-----------------------|--------------------------------|
| V. Rate Stabilization | On; Off ⬇️ |
| Maximum Rate | 80; 85; 100 ⬇️ ... 120 bpm |
| Interval Increment | 100; 110 ... 150 ⬇️ ... 400 ms |

Rate drop response parameters

| Parameter | Programmable values |
|---------------------------------|---|
| Rate drop response ^a | On; Off ⬇️ |
| Detection Type | Drop ⬇️; Low Rate; Both |
| Drop Detection | |
| Drop Size | 10; 15 ... 25 ⬇️ ... 50 bpm |
| Drop Rate | 30; 40 ... 60 ⬇️ ... 100 bpm |
| Detection Window | 10; 15; 20; 25; 30 s 1 ⬇️; 1.5; 2; 2.5 min |

Low Rate Detection

| | |
|-----------------|------------------|
| Detection Beats | 1; 2; 3 ⬇️ beats |
|-----------------|------------------|

Intervention

| | |
|-----------------------|-------------------------------|
| Intervention Rate | 70; 75 ... 100 ⬇️ ... 150 bpm |
| Intervention Duration | 1; 2 ⬇️ ... 15 min |

^aWhen Rate Drop Response is set to On, the lower rate is automatically set to 45 bpm.

Sleep parameters

| Parameter | Programmable values |
|------------|---|
| Sleep | On; Off ⬇️ |
| Sleep Rate | 30; 35 ... 50 ⬇️; 55; 60; 70; 75 ... 100 bpm |
| Bed Time | 00:00; 00:10 ... 22:00 ⬇️ ... 23:50 |
| Wake Time | 00:00; 00:10 ... 07:00 ⬇️ ... 23:50 |

Non-competitive atrial pacing (NCAP) parameters

| Parameter | Programmable values |
|------------------------|-----------------------------|
| Non-Comp Atrial Pacing | On ; Off |
| NCAP Interval | 200; 250; 300 ; 350; 400 ms |

MRI SureScan™ parameters

| Parameter | Programmable values |
|-----------------|----------------------------|
| MRI SureScan™ | On; Off |
| MRI Pacing Mode | DOO; AOO; VOO; ODO |
| MRI Pacing Rate | 60; 70; 75; 80 ... 120 bpm |

Additional pacing features

| Parameter | Programmable values |
|-------------------------------|---------------------|
| PMT Intervention | On ; Off |
| PVC Response | On ; Off |
| V. Safety Pacing ^a | On ; Off |

^a Delivered as LV pacing when the AdaptivCRT™ operating value is LV. Delivered as RV pacing when RV only pacing is permanently programmed. Otherwise, delivered as BiV pacing.

Medtronic CareAlert™ Parameters*

Clinical Management Alerts

| Parameter | Programmable values |
|--|--------------------------------------|
| AT/AF Burden and Rate Settings... | |
| AT/AF Alerts | |
| AT/AF Daily Burden Enable | Off ; On |
| Daily AT/AF Burden | 0.5; 1; 2; 6 ; 12; 24 hr/24hr |
| Avg. V. Rate During AT/AF Enable | |
| Daily Burden for Avg. V. Rate | 0.5; 1; 2; 6 ; 12; 24 hr/24hr |
| Avg. V. Rate During AT/AF | 90; 100 ... 150 bpm |
| Monitored VT Episode Detected | Off ; On |
| Total VP < 90% | Off ; On ^a |
| OptiVol 2.0 Fluid Settings... | Off |
| Observation Conditions | |
| OptiVol Threshold ^b | 30; 40; 50; 60 ... 100; 120 ... 180 |

*Connectivity with the Medtronic CareLink™ network is pending FDA submission and approval.

^a Alert triggered if percent of cumulative ventricular pacing is less than 90% for 7 consecutive days.

^b Decreasing the OptiVol Threshold makes the device more sensitive to changes in the patient's thoracic fluid status. Increasing the OptiVol Threshold could delay or prevent device observation of significant changes in the patient's thoracic fluid status.

Lead/Device Integrity Alerts

| Parameter | Programmable values |
|---------------------------------------|------------------------------------|
| Low Battery Voltage RRT | On ; Off |
| Lead Impedance Out of Range... | |
| Lead Impedance | |
| A. Pacing Enable | On ; Off |
| A. Pacing Less than | 200 ; 300; 400; 500 Ω |
| A. Pacing Greater than | 1,000; 1,500; 2,000; 3,000 Ω |
| RV Pacing Enable | On ; Off |
| RV Pacing Less than | 200 ; 300; 400; 500 Ω |
| RV Pacing Greater than | 1,000; 1,500; 2,000; 3,000 Ω |
| LV Pacing Enable | On ; Off |
| LV Pacing Less than | 200 ; 300; 400; 500 Ω |
| LV Pacing Greater than | 800; 1,000; 1,500; 2,000; 3,000 Ω |

Capture Management High Threshold

| | |
|--------------------------------|----------|
| High Threshold | |
| A. Capture Enable ^a | Off ; On |
| RV Capture Enable ^b | Off ; On |
| LV Capture Enable ^c | Off ; On |

^a If programmed to On, alert notification is sent if A. capture management has measured high thresholds for 3 consecutive days.

^b If programmed to On, alert notification is sent if RV capture management has measured high thresholds for 3 consecutive days.

^c If programmed to On, alert notification is sent if LV capture management has measured a high threshold for one day.

Longevity

Projected service life in years

| Percent Pacing | | | 500 Ω pacing impedance | | 600 Ω pacing impedance | |
|----------------|------|------|-------------------------------|-------|-------------------------------|-------|
| Atrial % | RV% | LV% | 2.5 V | 3.5 V | 2.5 V | 3.5 V |
| 0% | 100% | 100% | 10.1 | 7.7 | 10.6 | 8.2 |
| 15% | 100% | 100% | 9.9 | 7.4 | 10.4 | 8.0 |
| 50% | 100% | 100% | 9.4 | 6.8 | 9.9 | 7.4 |
| 100% | 100% | 100% | 8.7 | 6.1 | 9.3 | 6.8 |

Projected service life estimates are based on accelerated battery discharge data and device modeling as specified. Do not interpret these values as precise numbers.

Brief Statement

Percepta™/Percepta™ Quad, Serena™/Serena™ Quad, and Solara™/Solara™ Quad CRT-P MRI SureScan™ System (Percepta/Serena/Solara CRT-P MRI SureScan Systems) Implantable Cardiac Pacemakers with Cardiac Resynchronization Therapy

Indications

The Percepta/Serena/Solara CRT-P MRI SureScan Systems are indicated for NYHA Functional Class III and IV patients who remain symptomatic despite stable, optimal heart failure medical therapy and have a LVEF \leq 35% and a prolonged QRS duration and for NYHA Functional Class I, II, or III patients who have a LVEF \leq 50%, are on stable, optimal heart failure medical therapy if indicated and have atrioventricular block (AV block) that are expected to require a high percentage of ventricular pacing that cannot be managed with algorithms to minimize right ventricular pacing. Optimization of heart failure medical therapy that is limited due to AV block or the urgent need for pacing should be done post implant. Rate adaptive pacing is provided for those patients developing a bradycardia indication who might benefit from increased pacing rates concurrent with increases in activity. Dual chamber and atrial tracking modes are indicated for patients who may benefit from maintenance of AV synchrony. Antitachycardia pacing (ATP) is indicated for termination of atrial tachyarrhythmias in patients with one or more of the above pacing indications.

A complete SureScan pacing system is required for use in the MR environment. A complete SureScan pacing system includes a SureScan device with Medtronic SureScan leads or a Model 6725 pin plug for the right atrial port. To verify that components are part of a SureScan system, visit <http://www.mrisurescan.com>.

Contraindications

The Percepta/Serena/Solara CRT-P MRI SureScan Systems are contraindicated for concomitant implant with another bradycardia device and concomitant implant with an implantable cardioverter defibrillator. There are no known contraindications for the use of pacing as a therapeutic modality to control heart rate. The patient's age and medical condition, however, may dictate the particular pacing system, mode of operation, and implant procedure used by the physician. Rate-responsive modes may be contraindicated in those patients who cannot tolerate pacing rates above the programmed Lower Rate. Dual chamber sequential pacing is contraindicated in patients with chronic or persistent supraventricular tachycardias, including atrial fibrillation or flutter. Asynchronous pacing is contraindicated in the presence (or likelihood) of competition between paced and intrinsic rhythms. Single chamber atrial pacing is contraindicated in patients with an AV conduction disturbance. Antitachycardia pacing (ATP) therapy is contraindicated in patients with an accessory antegrade pathway.

Warnings and Precautions

A complete SureScan pacing system is required for use in the MR environment. Before performing an MRI scan, refer to the MRI technical manual for MRI-specific warnings and precautions. A complete SureScan pacing system includes a SureScan device with Medtronic SureScan leads or a Model 6725 pin plug for the right atrial port. Any other combination may result in a hazard to the patient during an MRI scan. Changes in a patient's

disease and/or medications may alter the efficacy of the device's programmed parameters. Patients should avoid sources of magnetic and electromagnetic radiation to avoid possible underdetection, inappropriate sensing and/or therapy delivery, tissue damage, induction of an arrhythmia, device electrical reset or device damage. Do not place transthoracic defibrillation paddles directly over the device. Certain programming and device operations may not provide cardiac resynchronization. Elective Replacement Indicator (ERI) results in the device switching to VVI pacing at 65 ppm. In this mode, patients may experience loss of cardiac resynchronization therapy and/or loss of AV synchrony. For this reason, the device should be replaced prior to ERI being set. Use of the device should not change the application of established anticoagulation protocols. Patients and their implanted systems must be screened to meet the following requirements for MRI: no implanted lead extenders, lead adaptors, or abandoned leads; no broken leads or leads with intermittent electrical contact as confirmed by lead impedance history; a SureScan pacing system implanted in the left or right pectoral region. Additionally, for patients whose device will be programmed to an asynchronous pacing mode when MRI SureScan is programmed to On, no diaphragmatic stimulation is present at a pacing output of 5.0 V and at a pulse width of 1.0 ms.

Potential Adverse Events or Potential Complications

Potential complications include, but are not limited to, rejection phenomena, erosion through the skin, muscle or nerve stimulation, oversensing, failure to detect and/or terminate arrhythmia episodes, and surgical complications such as hematoma, infection, inflammation, and thrombosis. Other potential complications related to the lead may include lead dislodgement, lead conductor fracture, insulation failure, threshold elevation, or exit block.

Potential MRI complications for the SureScan system include, but are not limited to, lead electrode heating and tissue damage resulting in loss of sensing or capture or both, or induced currents on leads resulting in continuous capture, VT/VF, and/or hemodynamic collapse; spontaneous tachyarrhythmia occurring during the scan that is not detected and treated because tachyarrhythmia detection is suspended while MRI SureScan is programmed to On; potential for VT/VF induction when the patient is programmed to an asynchronous pacing mode during MRI SureScan; device heating resulting in tissue damage in the implant pocket or patient discomfort or both; or damage to the functionality or mechanical integrity of the device resulting in the inability of the device to communicate with the programmer.

See the appropriate Percepta/Serena/Solara product Device Manuals for detailed information regarding the implant procedure, indications, contraindications, warnings, precautions, and potential complications/adverse events. See the appropriate Percepta/Serena/Solara product MRI SureScan Technical Manual before performing an MRI scan. For further information, call Medtronic at 1-800-328-2518 and/or consult Medtronic's website at www.medtronic.com or www.mrisurescan.com.

Caution: Federal law (USA) restricts these devices to sale by or on the order of a physician

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