

## Testing Sensitivity Threshold

CSICU: Test every shift. Others: test every 24 hours, by physician's orders, unless patient hemodynamics would be compromised.

1. Turn recorder on.
2. If the patient is 100% paced, turn the rate control at least 10 impulses per minute below the patient's intrinsic rate.
3. Turn output to lowest setting.
4. Increase the sensitivity value until pacer spikes are seen asynchronously. Only the pace indicator should be flashing.
5. Decrease the sensitivity value until pace spikes disappear. Only the sensitivity indicator should be flashing.
6. Set the sensitivity to 2:1. Set the safety margin to half the threshold.
7. Return rate to original setting.
8. Turn recorder off and place sensitivity threshold testing strip on ECG sheets.

**Sensitivity:** The degree to which a pacemaker is responsive to levels of electrical activity in the heart. The higher sensitivity number means that the pacemaker is less sensitive. The sensitivity number represents the minimum size of an electrical signal that will be detected by the pacemaker. Sensitivity is measured in millivolts (mV) - one thousandth of a volt.

**Intrinsic rate:** The naturally occurring heart rate.

**AV Interval (atrioventricular interval):** In a dual chamber pacemaker mode, the AV interval is the period of time between an atrial event (sensed or paced) and a scheduled paced ventricular event. It is typically measured in milliseconds (ms) - one thousandth of a second. The AV interval can be thought of as the pacemaker equivalent of the PR interval in normal conduction.

## Testing Stimulation Threshold

Test every 8 hours, by physician's orders, unless patient's hemodynamics would be compromised.

1. Turn recorder on.
2. If patient is not pacing at this time, turn the rate on the pulse generator to at least 10 beats a minute above the patient's intrinsic rate.
3. While observing ECG, slowly increase the mA (output) until pacer spikes are seen without capture. The pace and sense indicators should be flashing intermittently.
4. Slowly increase mA until a QRS follows every pacer spike and note the setting. Only the pace indicator should be flashing.
5. Continue to increase mA to 2 to 3 times the threshold.
6. If the rate was temporarily increased, turn it back to the original setting.
7. Turn off the recorder and place stimulation threshold testing strip on ECG sheets.

**Stimulation threshold:** The minimum electrical stimulation needed to consistently elicit a cardiac depolarization. Measured in milliamperes (mA) - one thousandth of an ampere.

## Transcutaneous Pacing

Large electrodes are placed as directed by the manufacturer either front and back or front and left side. They are attached to an external pulse generator via a pacing cable. Transcutaneous pacing is also known as noninvasive transcutaneous pacing (NTP). When using this method, you determine the stimulation threshold by turning up the output or mA dial until capture is obtained. Typical threshold current is 40mA to 80mA. The ideal output current is the lowest value that will maintain capture. This is usually about 10% above threshold.