



## TRANSCUTANEOUS PACING

**Effective:** January 1, 2021  
**Replaces:** May 1, 2017  
**Review:** January 1, 2023

### 1. Introduction

- 1.1. Transcutaneous pacing allows for temporary cardiac pacing through pacing pads on the skin for treatment of symptomatic brady-arrhythmias. Consider alternate causes of dysrhythmias prior to initiation of TCP including hypoxia, hypothermia, head injury, aneurysm, and drug overdose.

### 2. Indications

- 2.1. Symptomatic bradycardia (see **700-A05** and **700-P05**) defined as heart rate less than 60 bpm and signs of diminished perfusion related to bradycardia and unresponsive to atropine treatment
- 2.2. Symptomatic “failed” permanent pacemakers
- 2.3. Symptomatic second degree AV block Type II or third degree AV block
- 2.4. Symptomatic bradycardia in post heart transplant patient (denervated transplant heart)

### 3. Contraindications

- 3.1. Non-intact skin at the site of the electrode placement.
- 3.2. Less than 15 years old
- 3.3. Asystole, confirmed in three (3) leads

### 4. Equipment

- 4.1. Pacemaker, monitor, and defibrillator
- 4.2. Two (2) sets of electrodes; rhythm monitoring and pacing

### 5. Procedure

- 5.1. Strongly consider sedation as necessary for pacing discomfort, Midazolam and/or Morphine Sulfate, sedation is not mandatory
- 5.2. Turn monitor on to “pacing” mode
- 5.3. Apply monitor cable leads to patient to determine rhythm
- 5.4. Apply pacing pads;
  - 5.4.1. Anterior pad placed just to the left of the sternum
  - 5.4.2. Posterior pad on the patient’s back to the left of the spine
- 5.5. Attach pads to the instrument cable and attach cable to pacer, carefully check all connections
- 5.6. Set initial pacing rate at 80 bpm
- 5.7. Select output level: begin at 0 mA
  - 5.7.1. Increase by 10 mA until capture/pulses are noted
  - 5.7.2. Then increase output by an additional 10 mA
  - 5.7.3. In cardiac arrest setting, start at max power setting and decrease the output after capture is achieved
- 5.8. Assessment of capture:



- 5.8.1. Examine the ECG tracing on the monitor for pacer spikes that are each followed by a QRS complex
- 5.8.2. Assess quality of pulse and blood pressure
- 5.9. If capture is maintained but the patient remains symptomatic of inadequate tissue perfusion (SBP less than 90mmHg) or altered level of consciousness consider increasing the rate by 10 bpm until 100 bpm is reached
- 5.10. If perfusion remains a problem, consider IV fluids and dopamine. If perfusion remains a problem, contact the base physician for consultation and/or alteration of TCP settings

## 6. Complications

- 6.1. Failure to recognize VF due to the size of pacing artifact on the ECG screen
- 6.2. Induction of other dysrhythmias
- 6.3. Soft tissue discomfort may result from pacing. Ensure adequate analgesia and sedation