Classification
Antidysrhythmic

Prehospital Indications
Cardiac Dysrhythmia:
- SVT - Narrow Complex: HR ≥ 150 for adults; ≥180 for a child; and ≥220 for infants
- Perfusing unresponsive to Valsalva
- Poorly perfusing (if alert)
- Regular/Monomorphic Wide Complex Tachycardia with adequate perfusion

Other Common Indications
Used in hospital setting as part of drug combination for cardiac “stress testing” and diagnosis of pulmonary hypertension

Adult Dose
- 6 or 12mg rapid IVP (per protocol), within 1-3 seconds, followed by a rapid flush of 10mL of NS
- If no conversion after 1-2 minutes, may repeat 12mg rapid IVP followed by rapid flush of 10mL of NS.

Pediatric Dose
- 0.1mg/kg (3mg/mL) rapid IVP, dose per MCG 1309, maximum 6mg, followed by a rapid flush of 10mL NS
- If no conversion after 1-2 minutes, may repeat one time 0.2mg/kg (3mg/mL) followed by a rapid flush of 10mL NS, dose per MCG 1309, maximum 12mg

Mechanism of Action
Slows conduction through the AV node and interrupts AV reentry pathways as well as conduction through the sinoatrial (SA) nodes

Pharmacokinetics
Onset immediate, Duration < 10 secs

Contraindications
- Should not be used for sinus tachycardia, despite rate >150
- 2nd and 3rd degree heart block without pacemaker
- Sinus Node Disease (Sick Sinus Syndrome)
- Wolff-Parkinson-White (WPW) Syndrome or ECG consistent with WPW
- Atrial flutter or fibrillation
- Heart transplant – Base contact required, as noted “super-sensitivity” of transplanted heart to adenosine

Interactions
Potentiated by blocker of nucleoside transport [e.g., carbamazepine (Tegretol)]
Antagonized by methylxanthines such as caffeine and theophylline

Adverse Effects
- Blurred vision
- Bradycardia / Asystole
- Chest pain / Chest pressure
- Dyspnea
- Head pressure
- Hypotension
- Lightheadedness / Dizziness
- Metallic taste / Throat tightness
- Numbness / Tingling
- Palpitations
Prehospital Considerations

- Cannulate a large proximal vein with an 18-20g catheter. Use IV port closest to patient and immediately flush with 10mL Normal Saline to ensure rapid administration of drug.
- Run a 6 second ECG strip before, during and after drug administration.
- Patients usually have a 10 second period of escape beats or asystole before the sinus node starts up again. This is perceived as a feeling of impending death and can be extremely frightening for patients.
- If the wide-complex tachycardia is ventricular in origin, Adenosine is highly unlikely to cause successful cardioversion.