

# ADENOSINE [ADENOCARD]

<b>DRUG CLASSIFICATION</b>	Class V Antiarrhythmic Parasympathomimetic Agent
<b>MECHANISM OF ACTION</b>	Adenosine induces hyperpolarization of cardiac cells by binding to AV Node's A1 and A2 purine receptors, slowing overall conduction and interrupting re-entry pathways through the AV node, ultimately restoring normal conduction through the SA Node. Adenosine causes cardiac vasodilation which, increases cardiac blood flow in the presence of PSVT. The short half-life (10 seconds) enables desired clinical effects in the absence of toxicity.
<b>CLINICAL INDICATIONS</b>	Reentry or Paroxysmal Supraventricular Tachydysrhythmias
<b>STANDARD CONTRAINDICATIONS</b>	Hypersensitivity to Adenosine or Relative Components Second-Degree or Third-Degree AV-Block (Without a Functioning Artificial Pacemaker) Sick Sinus Syndrome or Symptomatic Bradycardia (Without a Functioning Artificial Pacemaker) Known or Suspected Bronchoconstrictive or Bronchospastic Lung Disease Polymorphic (Irregular) Wide-Complex Tachycardia
<b>POTENTIAL ADVERSE EFFECTS</b>	Dyspnea / Headache / Lightheadedness / Flushing / GI-Distress / Alteration in BP / Palpitations / Chest Discomfort / Prolonged Asystole / A-Fib / AV-Block / Bradycardia / PAC's / PVC's / Torsade's de Pointes / V-Fib / V-Tach / Myocardial Infarction / Cardiac Arrest
<b>GENERAL RISKS &amp; PRECAUTION</b>	<b>1)</b> Should <u>not</u> be used in the post-cardiac transplant patient <i>without</i> Contact of Medical Control. <b>2)</b> Use extreme caution in presence of PSVT with underlying WPW and give only with defibrillator available. <b>3)</b> For stable monomorphic tachycardia, Adenosine may only be given if rhythm is regular, and defibrillator is available. <b>4)</b> Use extreme caution in presence of First-Degree AV or Bundle-Branch Block due to risk for higher-degree AV Block. <b>5)</b> Use extreme caution with elderly due to the increased risk for AV Block and overall hemodynamic instability. <b>6)</b> Use extreme caution with patients taking medication to slow AV node conduction i.e., Digoxin, Verapamil, etc. <b>7)</b> Use extreme caution in presence of poor perfusion due to risk of transient hypotension which, is usually self-limiting. <b>8)</b> Use extreme caution in non-bronchoconstrictive types of obstructive lung disease such as Emphysema, Bronchitis, etc.
<b>PROTOCOL INDEX</b>	Adult Tachycardia; Narrow Complex (AC-6) Adult Monomorphic Tachycardia; Wide Complex (AC-7) Pediatric Tachycardia; Narrow Complex (PC-5) Pediatric Tachycardia; Wide Complex (PC-6)

## MEDICATION ADMINISTRATION

### ADULT

### PEDIATRIC

**\*\*\* Utilize a PROXIMAL parenteral access site and administer EACH dose as a RAPID-PUSH, immediately followed by a 20 mL RAPID-FLUSH of Normal Saline.**

**Regular, Monomorphic Narrow Complex Tachycardia (Clinically Unstable)**

MAY PROCEED WITHOUT PREATTEMPTING VAGAL MANEUVERS

Initial Dose: 6 mg [IV/IO]  
Repeat Dose: 12 mg [IV/IO]  
Repeat Dose: 12 mg [IV/IO]  
(Total Maximum: 3 Doses)

**Regular, Monomorphic Narrow Complex Tachycardia (Clinically Stable)**

CONSIDER / ATTEMPT VAGAL MANEUVERS PRIOR TO ADENOSINE

Initial Dose: 6 mg [IV/IO]  
Repeat Dose: 12 mg [IV/IO]  
Repeat Dose: 12 mg [IV/IO]  
(Total Maximum: 3 Doses)

**Regular, Monomorphic Wide-Complex Tachycardia (Clinically Stable)**

MAY TYPICALLY PRESENT AS V-TACH -OR- SVT WITH ABERRANCY

Initial Dose: 6 mg [IV/IO]  
Repeat Dose: 12 mg [IV/IO]  
(Total Maximum: 2 Doses)

**\*\*\* Utilize a PROXIMAL parenteral access site and administer EACH dose as a RAPID-PUSH, immediately followed by a 20 mL RAPID-FLUSH of Normal Saline.**

**Regular, Monomorphic Narrow-Complex Tachycardia (Probable SVT)**

CONSIDER / ATTEMPT VAGAL MANEUVERS PRIOR TO ADENOSINE

Initial Dose: 0.1 mg / kg [IV/IO]; (Maximum Initial Dose: 6 mg)  
Repeat Dose: 0.2 mg / kg [IV/IO]; (Maximum Repeat Dose: 12 mg)  
Repeat Dose: 0.2 mg / kg [IV/IO]; (Maximum Repeat Dose: 12 mg)  
(Total Maximum: 3 Doses)

**Regular, Monomorphic Wide-Complex Tachycardia (Probable VT)**

Initial Dose: 0.1 mg / kg [IV/IO]; (Maximum Initial Dose: 6 mg)  
Repeat Dose: 0.2 mg / kg [IV/IO]; (Maximum Repeat Dose: 12 mg)  
Repeat Dose: 0.2 mg / kg [IV/IO]; (Maximum Repeat Dose: 12 mg)  
(Total Maximum: 3 Doses)

**Please Note:**

Expert consultation is recommended for further medication management and/or cardioversion for treatment of probable VT in pediatric patients.