



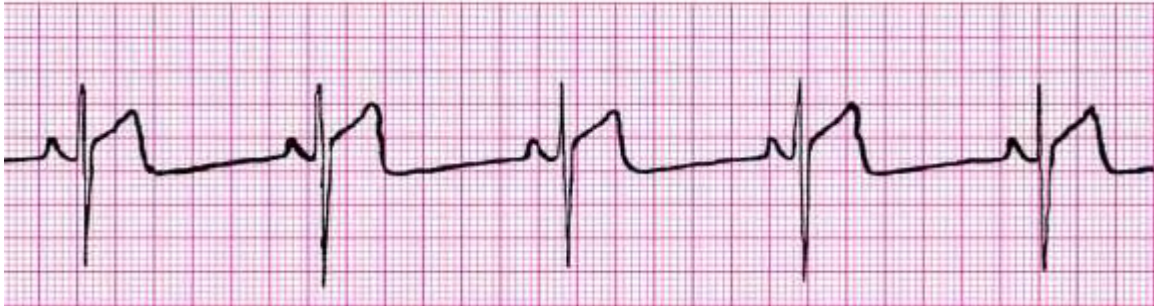


# Study Guide for ACLS Precourse Self-Assessment

20 rhythm strips on Precourse Self-Assessment with the following matching choices:

Agonal rhythm/Asystole Atrial Fibrillation Flutter Ventricular Fibrillation Monomorphic Ventricular Tachycardia Normal Sinus Rhythm Polymorphic Ventricular Tachycardia	Pulseless Electrical Activity (PEA) Supraventricular Tachycardia (SVT) Second-Degree Atrioventricular Block (Mobitz I, Wenckebach) Second-Degree Atrioventricular Block (Mobitz II) Sinus Bradycardia Sinus Tachycardia Third-Degree Atrioventricular Block
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RHYTHM & ETIOLOGY	CRITERIA OVERVIEW	UNIQUE CRITERIA	SAMPLE STRIPS
<b>Normal Sinus Rhythm</b> <ul style="list-style-type: none"> <li>• Normal, None</li> </ul>	RHY – Regular R – 60-100 P – Upright PRI – 0.12-0.20 QRS – 0.04-0.10	None, normal rhythm	
<b>Sinus Tachycardia</b> <ul style="list-style-type: none"> <li>• Exercise</li> <li>• Anxiety</li> <li>• Caffeine</li> <li>• Nicotine</li> <li>• Fever</li> <li>• Shock</li> <li>• CHF</li> <li>• Hypotension</li> <li>• Pain</li> <li>• Hypoxemia</li> <li>• Anterior MI</li> </ul>	RHY – Regular R – 100-160 P – Upright PRI – 0.12-0.20 QRS – 0.04-0.10	Rate 100-160	

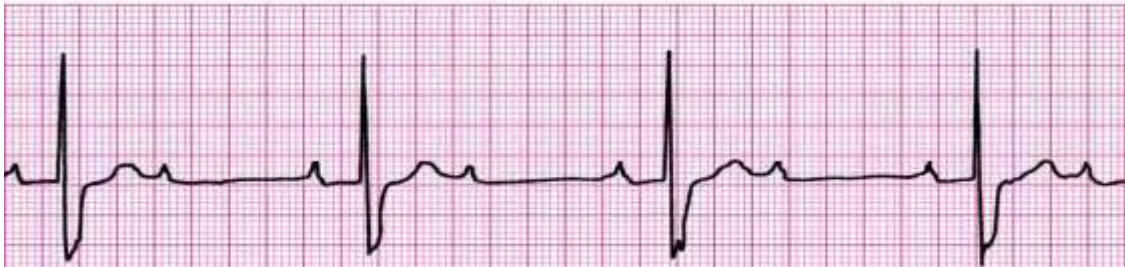



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RHYTHM & ETIOLOGY	CRITERIA OVERVIEW	UNIQUE CRITERIA	SAMPLE STRIPS
<p><b>Sinus Bradycardia</b></p> <ul style="list-style-type: none"> <li>• Damage SA</li> <li>• Normal sleep athletes</li> <li>• Vagal</li> <li>• Glaucoma</li> <li>• Hypothermia</li> <li>• Inferior MI</li> <li>• Drugs – MS, digoxin, Inderal</li> <li>• IICP</li> </ul>	<p>RHY – Regular            R – Below 60            P – Upright            PRI – 0.12-0.20            QRS – 0.04-0.10</p>	<p>Rate below 60</p>	
<p><b>PVC/PVD</b>            Premature Ventricular Contraction/Depolarization</p> <ul style="list-style-type: none"> <li>• Hypoxia</li> <li>• Hypotension</li> <li>• Anemia</li> <li>• Ischemic heart disease</li> <li>• Electrolytes</li> <li>• M.I.</li> <li>• Myocarditis, pericarditis</li> <li>• CHF</li> <li>• Stress, fatigue, smoking</li> <li>• Overeating, caffeine</li> <li>• Hypoglycemia</li> <li>• Sepsis</li> <li>• Cyclic anti-depressants</li> </ul>	<p>AN ECTOPIC BEAT            RHY – Irregular            R – 60-100            P – Upright            PRI – 0.12-0.20            QRS – 0.04-0.10</p>	<p>SR, early beat has Vent beat (wide &amp; bizarre)</p>	
<p><b>Supraventricular Tachycardia</b></p> <ul style="list-style-type: none"> <li>• Not visible sudden start or stop</li> </ul>	<p>RHY – Regular            R – 160 - 250            P – Upright            PRI – 0.12-0.20            QRS – 0.04 – 0.10</p>	<p>Rate above 160-250</p>	

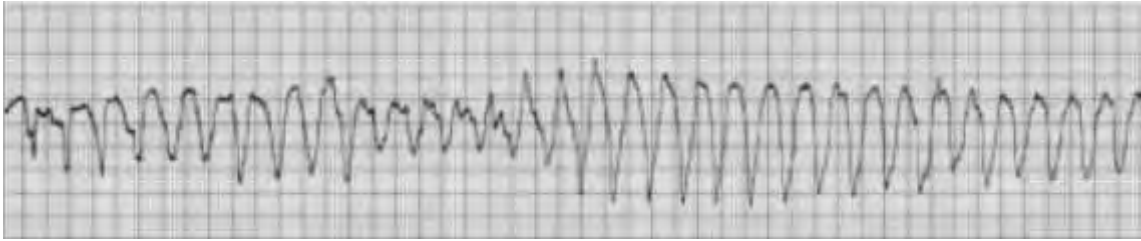
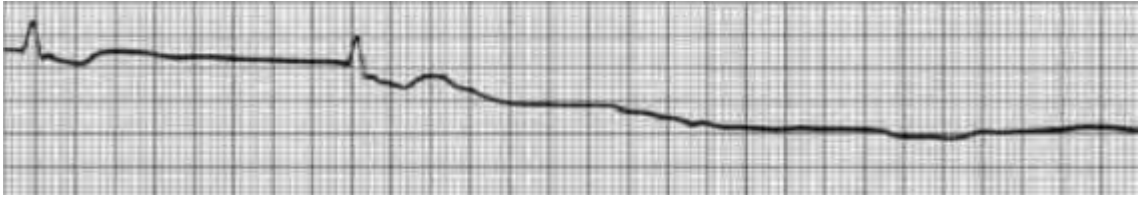
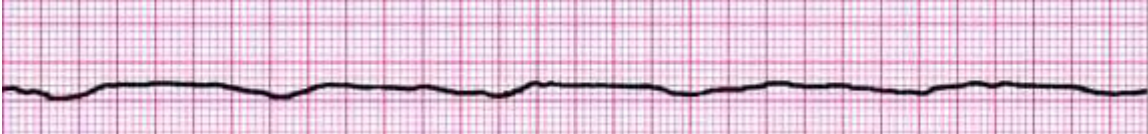
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RHYTHM & ETIOLOGY	CRITERIA OVERVIEW	UNIQUE CRITERIA	SAMPLE STRIPS
<p><b>Atrial Flutter</b></p> <ul style="list-style-type: none"> <li>Ischemic heart disease</li> <li>MI</li> <li>Digoxin toxicity</li> <li>Mitral, Tricuspid valve disease</li> <li>Stress</li> <li>PE</li> <li>Hyperthyroid</li> <li>Often temp</li> </ul>	<p>RHY – Regular or Irregular                      R – Atrial 250-400                      Vent: 70 - 150                      P – None, Fs                      PRI – None                      QRS – 0.04-0.10</p>	<p>Regular or Irregular                       No Ps (called Fs)                       Saw tooth</p>	
<p><b>Atrial Fibrillation</b></p> <ul style="list-style-type: none"> <li>Ischemic heart disease</li> <li>Digoxin toxicity</li> <li>CHF</li> <li>MI</li> <li>Mitral or Tricuspid valve disease</li> </ul>	<p>RHY – Irregular                      R – Atrial 350-600                      Vent. –                      Below 100 controlled                      Above 100 uncontrolled                      P – None Fs                      PRI – None                      QRS – 0.04-0.10</p>	<p>Irregular, no                       No Ps (called Fs)</p>	
<p><b>PEA</b>  <b>Pulseless</b>  <b>Electrical Activity</b></p> <ul style="list-style-type: none"> <li>Looks like any rhythm that should have a pulse but does not</li> </ul>			
<p><b>2nd Degree AV Block Type I</b>  <b>Mobitz I</b>  <b>Wenckebach</b></p>	<p>RHY – Irregular                      PRI – Vary                      P – Extra Ps                      QRS – 0.04-0.10</p>	<p>Irregular                       EXTRA Ps                      PRI longer &amp; longer                       Dropped QRS</p>	

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RHYTHM & ETIOLOGY	CRITERIA OVERVIEW	UNIQUE CRITERIA	SAMPLE STRIPS
<b>2nd Degree AV Block Type II Mobitz II</b>	RHY – Regular or Irregular PRI – Constant P – Extra Ps QRS – Normal or wide	Regular or Irregular EXTRA Ps	
<b>3rd Degree AV Block Complete Heart Block</b> <ul style="list-style-type: none"> <li>• Same as 1<sup>st</sup> degree</li> </ul>	RHY – Regular PRI – vary P – Extra Ps QRS – Usually wide	Regular EXTRA Ps PRI varies greatly	
<b>Ventricular Tachycardia Monomorphic</b> <ul style="list-style-type: none"> <li>• All complexes are the same shape and look the same</li> <li>• Wide complex tachycardia</li> </ul>	RHY – Regular R – Above 100 P – None PRI – None QRS – Wide, bizarre	R over 100 All Vent beats	
<b>Ventricular Fibrillation</b> <ul style="list-style-type: none"> <li>• Following V Tach</li> <li>• Acute MI</li> <li>• Electrolyte</li> <li>• Imbalance</li> </ul>	RHY – Chaotic R – None P – None PRI – None QRS – None, fibrillatory line	Chaotic wavy line No pulse	

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RHYTHM & ETIOLOGY	CRITERIA OVERVIEW	UNIQUE CRITERIA	SAMPLE STRIPS
<b>Torsades de Pointes</b> <b>Polymorphic Ventricular Tachycardia</b>  <i>Best treated with magnesium</i>	RHY – Chaotic waves R – None P – None PRI –None QRS – Points twist	Chaotic wavy line  No pulse  Points twist	
<b>Agonal</b>  <ul style="list-style-type: none"> <li>Dying heart</li> <li>Drugs used in cardiac arrest provide some electrical waves</li> </ul>	RHY – Regular R – Slow P – None PRI – None QRS – Very, very wide	Slow wide bizarre stretched out waves  No Pulse	
<b>Asystole</b>  <ul style="list-style-type: none"> <li>Primary event in cardiac arrest</li> <li>Untreated V-tach or V-fib</li> </ul>	RHY – None unless only Ps R – No Vent rate P – May be present PRI – None QRS – None	Straight line or only Ps  No Pulse	

**Calculating Heart Rate - note strips on pretest are longer than 6 seconds.**

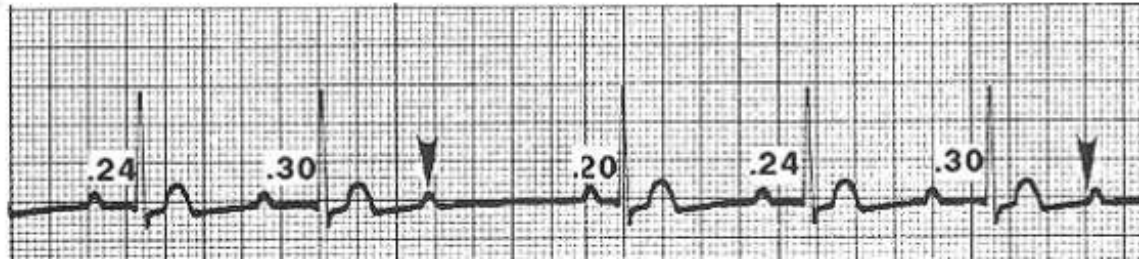
**Table for Small Box Method**

To calculate the heart rate, count the number of 0.04 squares (or small boxes) between two QRS complexes (1500 divided by X = HR)

<b>Small Boxes from R to R</b>	9 = 168	14 = 107	19 = 79	24 = 63	29 = 52	34 = 44	39 = 38	44 = 34
5 = 300	10 = 150	15 = 100	20 = 75	25 = 60	30 = 50	35 = 43	40 = 37	45 = 33
6 = 250	11 = 136	16 = 94	21 = 72	26 = 58	31 = 48	36 = 42	41 = 37	46 = 33
7 = 214	12 = 125	17 = 88	22 = 68	27 = 56	32 = 47	37 = 41	42 = 36	47 = 32
8 = 188	13 = 115	18 = 83	23 = 65	28 = 54	33 = 45	38 = 40	43 = 35	48 = 31

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## Heart Blocks and Tricks for Analysis



### 2<sup>nd</sup> Degree AV block Type I Mobitz I Wenckebach

#### Extra Ps

Rhythm is always irregular from QRS to QRS

PR intervals get longer and longer



### 2<sup>nd</sup> Degree AV block Type II Mobitz II

#### Extra Ps

PR intervals on conducted beats are the same - the only heart block with extra Ps that has this



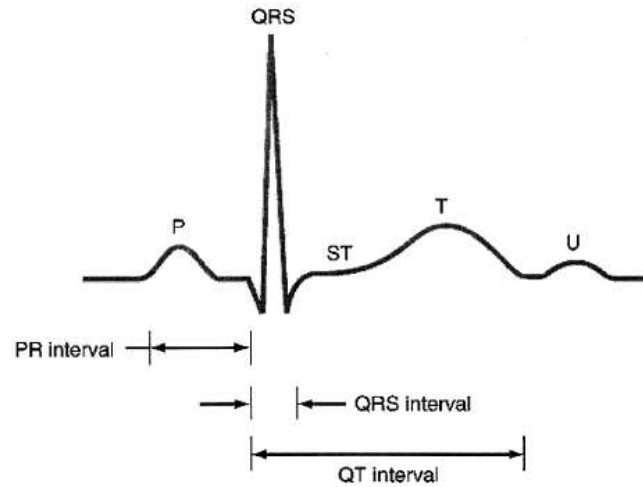
### 3<sup>rd</sup> Degree Heart Block Complete Heart Block

#### Extra Ps


Rhythm is always regular from QRS to QRS

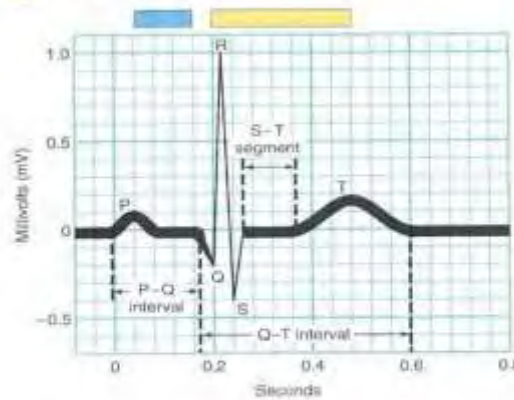
PR Intervals different

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<http://www.univie.ac.at/cga/courses/BE513/EKG/qrs.gif>

 An ECG is a recording of the electrical activity that initiates each heartbeat.



Key:

-  Atrial contraction
-  Ventricular contraction

<http://pspl.technion.ac.il/projects/2004s22/ecg1.JPG>

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Additional material created to enhance and supplement the learning experience and is not AHA approved

Cardiac Dysrhythmia Overview is courtesy of Key Medical Resources, Inc. Terry Rudd

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