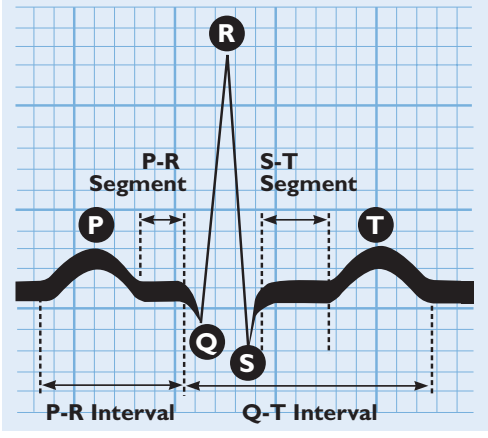


# Recognizing Dysrhythmias



## Sinus Rhythms

Lead II

Lead V1

**Normal Sinus Rhythm**

| P Wave  | PR Interval    | QRS    | Rate          | Rhythm  |
|---|----------------|--------|---------------|---------|
| Precedes each QRS complex; Identical size and shape; Normal & upright in leads II, III, aVF | 0.12 to 0.20 s | 0.12 s | 60 to 100 bpm | Regular |

Lead II

Lead V1

**Sinus Tachycardia**

| P Wave  | PR Interval    | QRS    | Rate           | Rhythm  |
|---|----------------|--------|----------------|---------|
| Precedes each QRS complex; Identical size and shape; Normal & upright in leads II, III, aVF | 0.12 to 0.20 s | 0.12 s | 100 to 200 bpm | Regular |

Lead II

Lead V1

**Sinus Bradycardia**

| P Wave  | PR Interval    | QRS    | Rate     | Rhythm  |
|---|----------------|--------|----------|---------|
| Precedes each QRS complex; Identical size and shape; Normal & upright in leads II, III, aVF | 0.12 to 0.20 s | 0.12 s | < 60 bpm | Regular |

Lead II

Lead V1

**Sinus Arrhythmia**

| P Wave  | PR Interval    | QRS    | Rate          | Rhythm                                       |
|---|----------------|--------|---------------|--|
| Precedes each QRS complex; Identical size and shape; Normal & upright in leads II, III, aVF | 0.12 to 0.20 s | 0.12 s | 60 to 100 bpm | Variable P-P or R-R vary by more than 0.16 s |

## Atrial Rhythms

Lead II

Lead V1

**Sinus Pause/Arrest**

| P Wave    | PR Interval | QRS    | Rate                   | Rhythm                                       |
|-----------|-------------|--------|------------------------|--|
| No P wave | N/A         | No QRS | Rate depends on pauses | Usually Regular < 3.0 s Pause > 3.0 s Arrest |

Lead II

Lead V1

**Wandering Atrial Pacer**

| P Wave                             | PR Interval                 | QRS    | Rate          | Rhythm    |
|------------------------------------|-----------------------------|--------|---------------|-----------|
| P Wave changes shape and direction | Varies from short to normal | 0.12 s | 60 to 100 bpm | Irregular |

Lead II

Lead V1

**Premature Atrial Beat**

| P Wave                                       | PR Interval  | QRS    | Rate | Rhythm                                 |
|--|--|--------|------|--|
| Looks different from the normal sinus P Wave | Conduction may be shortened, normal, lengthened or blocked | 0.12 s | N/A  | Early beat with non-compensatory pause |

Lead II

Lead V1

**Atrial Tachycardia**

| P Wave  | PR Interval     | QRS            | Rate   | Rhythm         |
|---|-----------------|----------------|--------|----------------|
| P waves best seen in V1; Visible P Waves may look different than normal; May be hidden in | previous T Wave | 0.12 to 0.20 s | 0.12 s | 150 to 250 bpm |

## Junctional Rhythms

Lead II

Lead V1

**Junctional Escape Rhythm**

| P Wave   | PR Interval                       | QRS    | Rate         | Rhythm  |
|--|-----------------------------------|--------|--------------|---------|
| Inverted if retrograde conduction; absent or following the QRS | < 0.12 s if retrograde conduction | 0.12 s | 40 to 60 bpm | Regular |

Lead II

Lead V1

**Junctional Premature Beat**

| P Wave                            | PR Interval | QRS    | Rate | Rhythm     |
|-----------------------------------|-------------|--------|------|------------|
| Inverted, absent or following QRS | < 0.12 s    | 0.12 s | N/A  | Early beat |

Lead II

Lead V1

**Atrial Flutter**

| P Wave                 | PR Interval    | QRS    | Rate   | Rhythm                            |
|------------------------|----------------|--------|--|-----------------------------------|
| Saw-toothed appearance | Not measurable | 0.12 s | Atrial Rate 250 to 350 bpm<br>Ventricular rate depends on conduction block | Regular 2:1, 3:1, 4:1 or variable |

Lead II

Lead V1

**Atrial Fibrillation**

| P Wave   | PR Interval | QRS    | Rate   | Rhythm    |
|--|-------------|--------|--|-----------|
| Rapid atrial activity producing irregular fibrillatory waves | N/A         | 0.12 s | Atrial rate 350 to 450<br>Ventricular rate slow to rapid | Irregular |

## AV Blocks

Lead II

Lead V1

**First Degree AV Block**

| P Wave  | PR Interval | QRS    | Rate          | Rhythm  |
|---|-------------|--------|---------------|---------|
| Precedes each QRS complex; Identical size and shape; Normal & upright in leads II, III, aVF | > 0.20 s    | 0.12 s | 60 to 100 bpm | Regular |

Lead II

Lead V1

**Second Degree AV Block Type I Mobitz I or Wenckebach**

| P Wave | PR Interval  | QRS   | Rate     | Rhythm    |
|--------|--|---|----------|-----------|
| Normal | PR Interval increases until impulse fails to conduct | 0.12 s<br>R-R interval progressively shortens | Variable | Irregular |

Lead II

Lead V1

**Second Degree AV Block Type II Mobitz II**

| P Wave   | PR Interval                   | QRS                | Rate  | Rhythm  |
|--|-------------------------------|--------------------|---|---|
| Identical size and shape; Some P Waves fail to conduct | Constant with conducted beats | 0.12 s or > 0.12 s | P-P rate 60 to 100 bpm<br>R-R rate depends on degree of block (2:1, 3:1, 4:1) | P-P rate regular; R-R interval may be Regular or Irregular depending on block |

Lead II

Lead V1

**Third Degree AV Block**

| P Wave                   | PR Interval              | QRS                                     | Rate   | Rhythm                     |
|--------------------------|--------------------------|---|--|----------------------------|
| P and QRS not associated | P and QRS not associated | > 0.12 s<br>Depends on escape pacemaker | P-P rate 60 to 100 bpm<br>R-R rate usually 20 to 40 bpm; Depends on escape pacemaker | P-P Regular<br>R-R Regular |

## Ventricular Rhythms

Lead II

Lead V1

**Ventricular Escape Rhythm**

| P Wave               | PR Interval | QRS      | Rate         | Rhythm  |
|----------------------|-------------|----------|--------------|---------|
| No P Wave associated | N/A         | > 0.12 s | 20 to 40 bpm | Regular |

Lead II

Lead V1

**Ventricular Tachycardia**

| P Wave   | PR Interval        | QRS      | Rate           | Rhythm  |
|--|--------------------|----------|----------------|---------|
| Retrograde P Waves may be present, usually AV dissociation | Variable or absent | > 0.12 s | 100 to 250 bpm | Regular |

Lead II

Lead V1

**Ventricular Fibrillation**

| P Wave | PR Interval | QRS    | Rate             | Rhythm  |
|--------|-------------|--------|------------------|---------|
| Absent | Absent      | Absent | Chaotic baseline | No PQRS |

Lead II

Lead V1

**Premature Ventricular Beat**

| P Wave                         | PR Interval | QRS      | Rate  | Rhythm     |
|--------------------------------|-------------|----------|---|------------|
| May have retrograde conduction | N/A         | > 0.12 s | Full compensatory pause; R-R intervals surrounding PVC = 2 normal R-R intervals | Early beat |

