5 Rhythm Strip Interpretation

Learning Outcomes

5.1 Describe the heart activity that produces each part of the ECG waveform.

5.2 Explain the process of evaluating ECG tracings and determining the presence of dysrhythmias.

5.3 Describe the criteria used to classify dysrhythmias, including rhythm, rate, P wave morphology, PR interval measurement, and QRS duration measurement.

Key Terms

action potential
complex
depolarization
intervals
isoelectric line
J point
morphology
polarization
repolarization
segment

5.1 Electrical Stimulation and the ECG Waveform

polarization The state of cellular rest in which the inside is negatively charged and the outside is positively charged.

depolarization The electrical activation of the cells of the heart that initiates contraction of the heart muscle.

action potential The change in the electrical potential of the heart muscle when it is stimulated.

Polarization is the state during which the heart cells are at their peak resting energy. During this portion of the cycle, the cells (in their resting state) are electrically polarized. This means the inside of the cardiac cell is negatively charged in relation to the outside of the cell. This is much like the opposite ends of a battery. One is negative and one is positive. This state of cellular rest, polarization, is the ready phase of the heart.

Depolarization, on the other hand, is a state of cellular stimulation that precedes contraction. It is the release of energy much like the "flash of a camera." It is the electrical activation of the cells of the heart when the electrical charge is reversed across the cell membrane so the interior becomes positively charged. This rapid change in polarization is known as **action potential.** The action potential is brought on by a rapid change in the cell membrane permeability to certain ions (they lose their internal negativity) in response to the electrical impulse from the SA node. These ions include sodium (Na^+), potassium (K^+), chloride (Cl^-), and calcium (Ca^{++}). Depolarization moves from cell to cell through the electrical pathways under normal circumstances. Depolarization is the most important

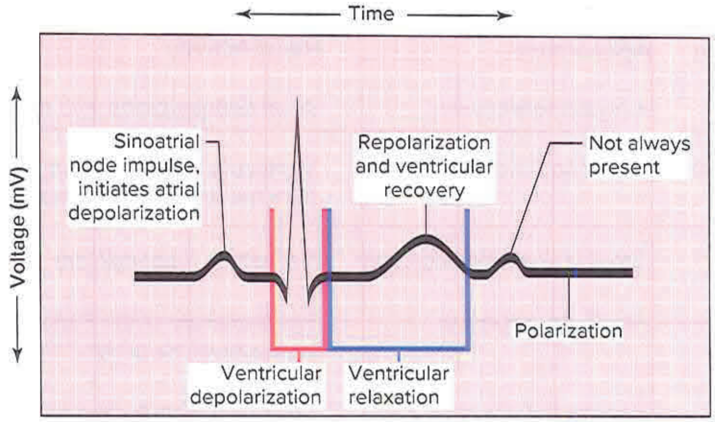

Figure 5-1 Depolarization and repolarization of the heart result in a characteristic waveform.

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electrical event in the heart—it causes the myocardial cells to shorten and contract and under normal circumstances results in pumping blood to the body.

repolarization The return of heart muscle cells to their resting electrical state, causing the heart muscle to relax.

Repolarization is a state of cellular recovery that follows each contraction. The cardiac cells return to their resting phase of internal negativity in order to prepare for another depolarization. During repolarization, the heart relaxes and allows the chambers of the heart to refill. Essentially during repolarization the "3Rs" occur, the heart Relaxes, Refills, and Re-energizes. Following repolarization, the heart returns to a polarized state and another electrical cycle known as a cardiac cycle is repeated (see Figure 5-1).

isoelectric line The period when the electrical tracing of the ECG is at zero or a straight line, and no positive or negative deflections are seen.

The ECG waveform is recorded from the electrical activity produced during depolarization and repolarization of the heart. The waveform on the electrocardiogram is a series of up-and-down deflections off a straight line known as an **isoelectric line.** Deflections that go up above this line are positive and deflections that go below the line are negative. The isoelectric line represents the period when no electrical activity is occurring in the heart and is known as a *baseline.* Deflections, which appear as waves on the ECG tracing, indicate electrical activity in the heart. The deflections above the baseline are positive; the deflections below the baseline are negative. The discussion of the direction of the deflections in this chapter is based on lead II of the ECG.

When Willem Einthoven first discovered the waveform, he labeled the waves of the electrocardiogram P, Q, R, S, and T. Legend holds that he chose the letters from the center of the alphabet because he did not know what the waves meant or whether other waves preceding the P wave or following the T wave would be discovered. The U wave was added after Einthoven's discovery. Each of these waves indicates specific activity in the heart.

interval The period of time between two activities within the heart.

segment A portion or part of the electrical tracing produced by the heart.

complex Atrial or ventricular contractions as they appear on the ECG; complete ECG waveforms.

In addition to the waves, the ECG waveform contains **intervals, segments,** and **complexes.** Each of these elements indicates specific activity within the heart. The elements include the QRS complex, the ST segment, the PR interval, and the QT interval (Table 5-1, Figure 5-2).

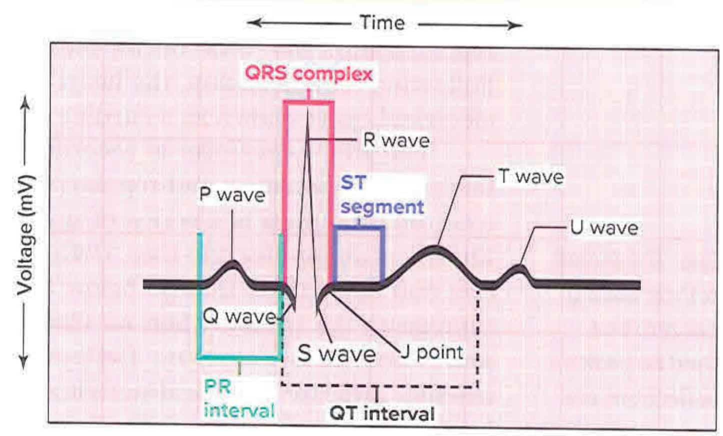
What Each Part of the Waveform Represents

The first deflection is positive and is known as the P wave. The P wave is generated when the atria depolarize. The P wave is small (compared to the other waves of the ECG), rounded, and is the first wave of the normal complex.

TABLE 5-1 ECG Components

Component	Appearance	Heart Activity
P wave	Upward small curve	Atrial depolarization with resulting atrial contraction
QRS complex	Q, R, and S waves	Ventricular depolarization and resulting ventricular contraction (larger than the P wave); atrial repolarization occurs (not seen)
T wave	Small upward-sloping curve	Ventricular repolarization
U wave	Small upward curve	Repolarization of the Purkinje fibers (not always seen); may be seen in instances of electrolyte imbalance
PR interval	P wave and baseline prior to QRS complex	Beginning of atrial depolarization to the beginning of ventricular depolarization
QT interval	QRS complex, ST segment, and T wave	Period of time from the start of ventricular depolarization to the end of ventricular repolarization
ST segment	End of QRS complex to the beginning of T wave	Time between ventricular depolarization and the beginning of ventricular repolarization

Figure 5-2 The ECG waveform and heart activity.



During the delay of conduction that occurs at the atrioventricular node, a short baseline segment is seen on the waveform. There is no electrical activity occurring (depolarization or repolarization); thus, no wave or deflection is seen. It is during this time that atrial kick occurs.

The next three waves occur together as the QRS complex representing ventricular depolarizations. The Q wave represents the conduction of the impulse down the interventricular septum. It is a negative deflection before the R wave. It is not unusual or abnormal for a QRS complex not to have a Q wave. A normal Q wave is less than one-fourth of the height of the R wave. The R wave is the positive waveform of the normal QRS complex. It represents the conduction of electrical impulse to the left ventricle. It is usually the easiest wave to locate on the ECG tracing. The S wave is the first negative deflection after the R wave. It represents the conduction of the electrical impulse through both ventricles. The Q, R, and S waves together form the QRS complex. The QRS complex represents ventricular depolarization.

It reflects the time it takes for the impulses to depolarize the interventricular septum down through the ventricular myocardium, causing the ventricles to contract. The normal ventricular depolarization time (QRS complex) is 0.06 to less than 0.12 second.

The ST segment is measured from the end of the S wave to the beginning of the T wave. This segment should normally be on the isoelectric line. It indicates the end of ventricular depolarization and the beginning of ventricular repolarization. The reason this segment is studied in a 12-lead ECG recording is to determine whether there is any ischemia or myocardial (heart) injury. **Ischemia,** which occurs when there is a sudden loss or reduction in blood supply (oxygen) to a region of heart tissue, can result in a change in the ST segment. The ST segment becomes elevated or depressed, depending on the extent of the ischemia and the amount of injury to the cardiac cells. A change in the ST segment typically indicates some form of injury to the heart muscle. These changes are studied when interpreting an ECG.

ischemia A sudden loss or reduction in blood supply (oxygen) to a region of the heart tissue. This occurs due to the presence of atherosclerotic plaque, blood clot, emboli, or even vascular spasm (Prinzmetal's angina).

The T wave represents ventricular repolarization. As repolarization occurs, the ventricular muscles relax. Normal T waves are in the same direction as the P wave. A normal QRS complex goes in both directions. A normal T wave on a 12-lead ECG tends to peak toward the end instead of the middle. Unlike the symmetrical mountain shape of the P wave, the T wave looks like a mountain with one sloping side.

The U wave follows the T wave. The U wave represents repolarization of the Purkinje fibers. It will be in the same direction as the T wave in most cases; it is more prominent when the heart rate is slow. The U wave does not always show up on the ECG and is often dismissed as artifact due to its low voltage; however, its presence can indicate an electrolyte imbalance.

The PR interval is measured from the beginning of the P wave to the beginning of the QRS complex. The normal length of time for the PR interval is 0.12 to 0.20 second. The PR interval on a normal ECG should be consistent. This time interval represents the time from initiation of the electrical impulse until the ventricles are stimulated by the impulse to start the contraction.

The QT interval is the time required for ventricular depolarization and repolarization to take place. It begins at the beginning of the QRS complex and ends at the end of the T wave. It includes the QRS complex, the ST segment, and the T wave (Figure 5-3).

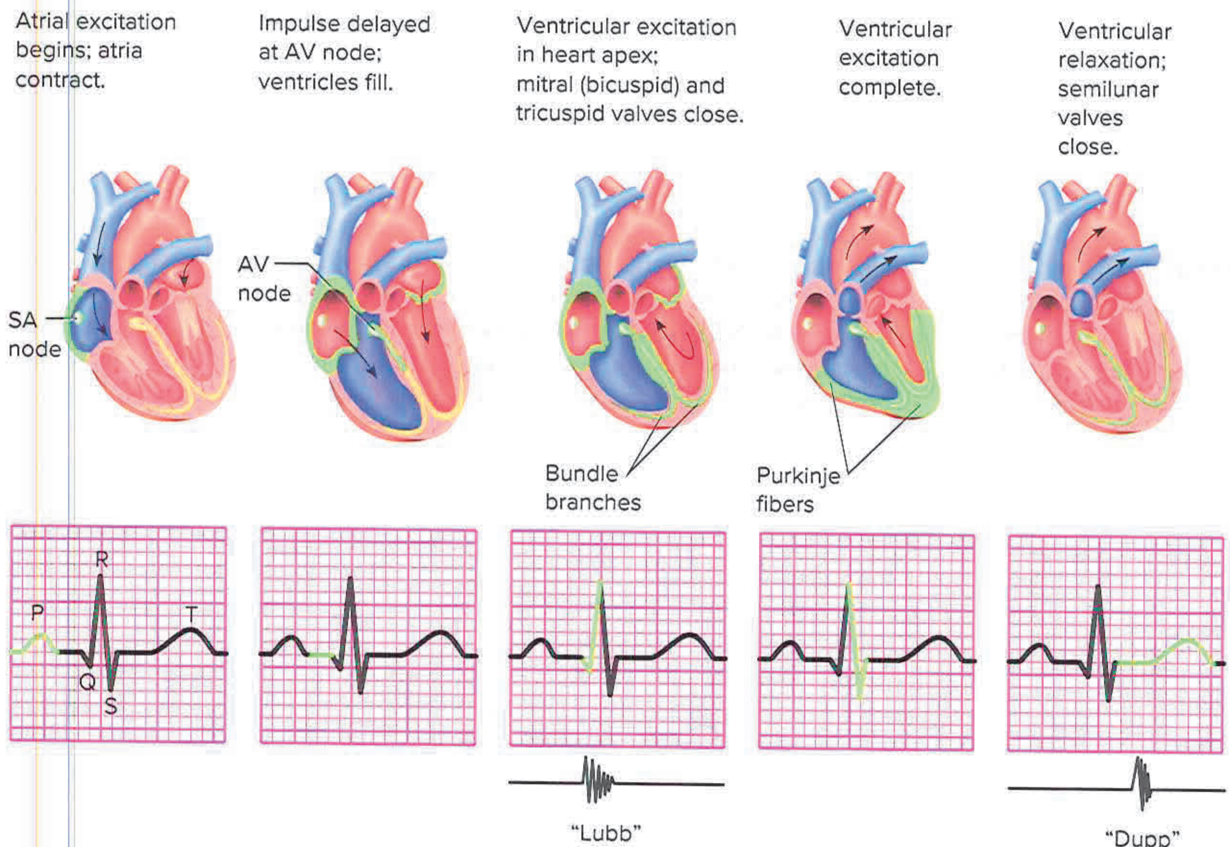
Many variables, such as the heart rate, coronary artery disease, electrolyte imbalance, and antidysrhythmic medications, affect the QT interval. A normal QT interval measures less than one-half of the R-R interval. A longer-than-normal QT interval may indicate that the patient is at an increased risk for certain ventricular dysrhythmias and sudden cardiac death. When the heart rate exceeds 100 beats per minute (bpm), the QT interval is of little clinical significance due to the QT interval shortening as a result of the increased heart rate.

The R-R interval is the time from the start of a QRS complex in a rhythm to the start of the next adjacent QRS complex. R waves are readily seen on the ECG and are used to calculate the heart rate in a regular rhythm.

The junction occurring at the end of the QRS complex and the beginning of the ST interval is the **J point.** This represents the end of the QRS complex and ventricular depolarization. The J point is important when measuring the length of the QRS complex and interpreting the ECG tracing. A normal QRS complex occurs within 0.06 to 0.10 second (Figure 5-2).

J point A point on the QRS complex where the depolarization is completed and repolarization starts.

Figure 5-3 Electrical activity in the heart.



Checkpoint Questions (LO 5.1)

1. Which electrical event normally results in contraction of the heart?

____

____

2. Which wave represents the atrial depolarization? Ventricle repolarization?

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3. What is ischemia?

____

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5.2 Rhythm Interpretation

The ECG is an important tool used for the diagnosis and treatment of various cardiac and other related diseases. An ECG tracing can reveal basic

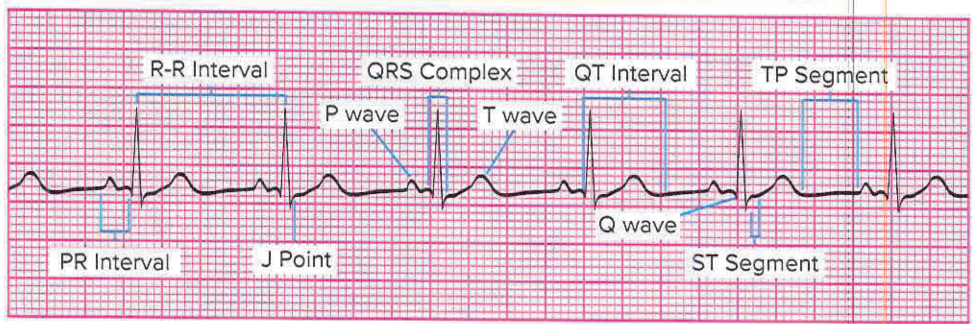

Figure 5-4 Waves, intervals, and segments.

information about a patient's condition. The ability to evaluate various ECG waveforms is an important skill for many healthcare professionals. In addition, as a multiskilled healthcare employee, you may be required to determine whether an ECG is normal or abnormal and be able to respond to a cardiac emergency, if necessary. You will follow your scope of practice and the policy at your place of employment when evaluating and reporting dysrhythmias.

The ECG waveform has various components—such as waves, segments, and intervals—that are evaluated and classified based on their size, length of time, and location on the tracing (see Figure 5-4). All of these different components determine the type of cardiac rhythm. In order to evaluate a rhythm, you must first understand each component and its normal appearance. When these components differ from the expected norm, a dysrhythmia (or arrhythmia) is indicated. Remember, an abnormal-appearing ECG tracing may be only the result of artifact. The tracing must be evaluated for artifact prior to the evaluation of the heart rhythm.

The process of determining the type of cardiac dysrhythmia can be challenging. The best approach in determining the actual rhythm is to take on the role of a detective. Detectives gather all the information they can before determining who is the suspect or how something has happened. The process of ECG analysis is similar. First, you gather all the data regarding the different waveforms and their patterns. The next step is to match all the information to the specific ECG rhythm criteria in order to classify the various cardiac dysrhythmias.

In this chapter, you are introduced to the rhythm criteria used to identify the various cardiac dysrhythmias. You will continue to apply the evaluation process as you learn about the categories of dysrhythmias in the following chapters. Learning the process of evaluating dysrhythmias, lays a strong foundation for your beginning practice or continued education in electrocardiography. After completing this chapter, you should have a clear sense of the process followed when analyzing heart rhythm tracings.

Checkpoint Question (LO 5.2)

1. What is evaluated and classified when determining dysrhythmias?

____

____

5.3 Identifying the Components of the Rhythm

The process introduced in this chapter is used to analyze all dysrhythmias, regardless of the category or complexity of the tracing. ECG analysis consists of a five-step process of gathering data about the following components of the ECG rhythm strips:

- Rhythm (regularity)
- Rate
- P wave **morphology** (shape)
- PR interval
- QRS duration and morphology

morphology Overall form and structure (shape).

Once the information is gathered, the data are compared to the specific criteria for each dysrhythmia. Cardiac dysrhythmia interpretation is an art but requires science to measure durations and intervals. Frequently, you will find practitioners discussing how to classify a dysrhythmia because patients may experience a variety of different cardiac dysrhythmias at the same time. This makes it difficult to determine the origin of the dysrhythmia or to classify it. The more interpretations you perform, the more efficient you become in classifying the rhythm.

Before you begin the steps, you should know that lead II is the most common monitoring lead. Unless otherwise specified, lead II will be used in this chapter and the rest of the text when discussing heart rhythms specifically.

Step 1: Determining the ECG Rhythm or Regularity

Determining the rhythm involves evaluating the pattern of how the atria and ventricles contract. P wave represents atrial depolarization and the QRS complex represents ventricular depolarization. The rhythm of atrial activity is evaluated by assessing the regularity of the P waves. The QRS complexes are assessed to evaluate ventricular depolarization. Calipers are used for this portion of the analysis to measure the distance between the P waves and between QRS complexes (Figure 5-5).

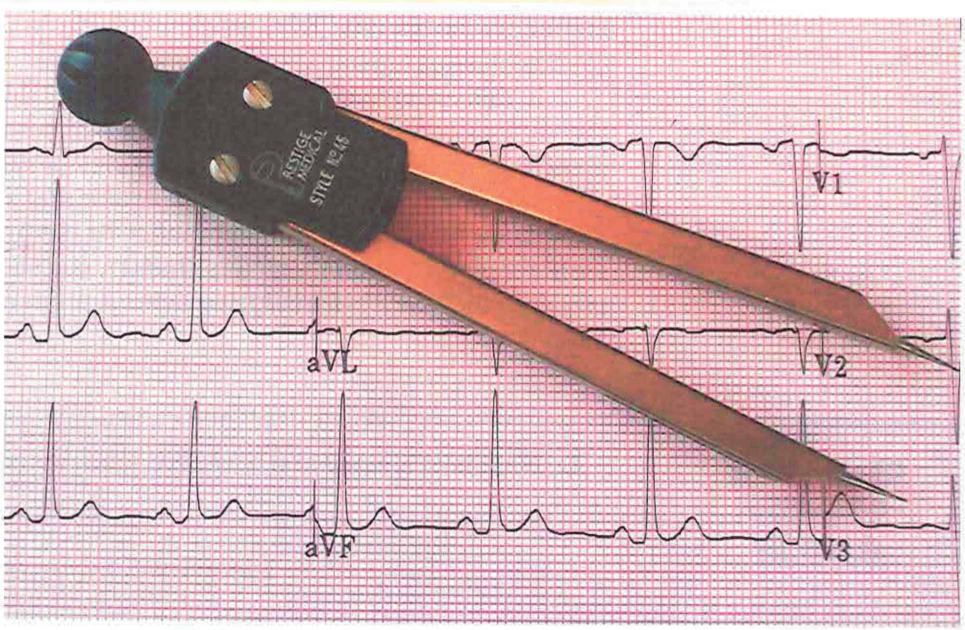

Figure 5-5 Calipers are used to measure ECG tracings.

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The P-P wave interval should be evaluated first. Place the first point of the caliper on the beginning of one P wave and the second point on the beginning of the next P wave (Figure 5-6). Measuring several of these intervals determines whether the P waves are occurring in a regular sequence. At least 6 seconds of the ECG tracing of P waves are measured to determine whether the P waves occur in a regular or irregular rhythm throughout the rhythm strip.

Next, determine the rhythm of the QRS complex. Because the QRS complex is a configuration of three waves, it is important to analyze this interval from the same wave point in each of the QRS complexes. For example, it is often easiest to see the R wave of the QRS complex. Measuring the R-R wave interval is easy due to its upward deflection (Figure 5-7A). Occasionally, the QRS complex does not exhibit an R wave, in which case you can use the point of the Q and S wave junction as an easy point of evaluation (Figure 5-7B). Most importantly, you must measure the same part of the waveform for each QRS complex to determine the regularity of the ventricular depolarization. The first point of the caliper should be placed on the first

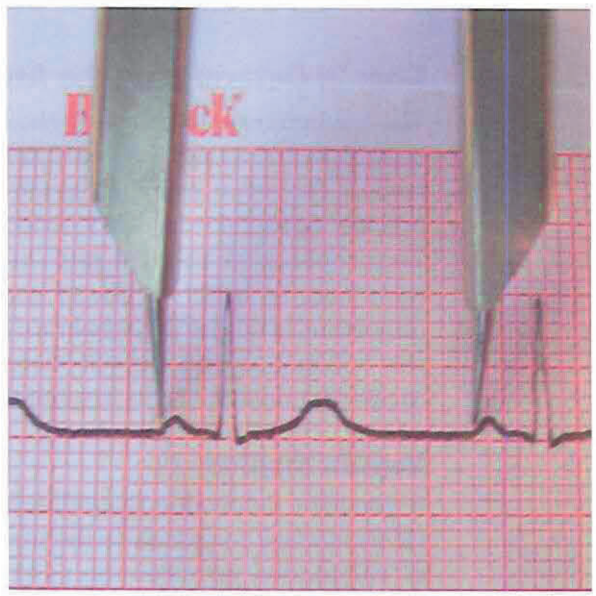

Figure 5-6 Measuring the P-P wave interval.

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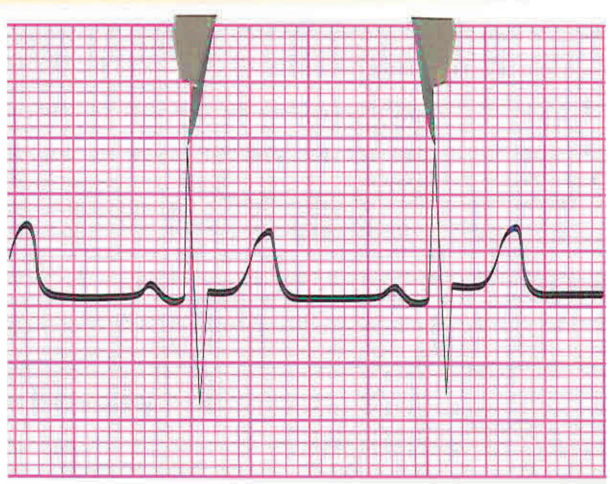
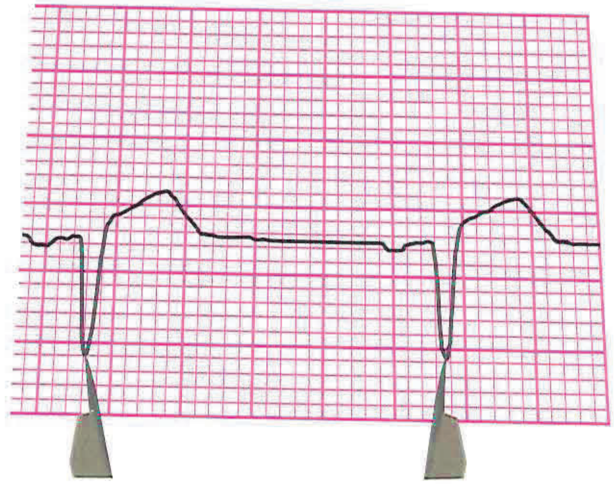


Figure 5-7A Determine the rhythm of the QRS complex by measuring the R-R wave interval using the tip of the upward deflections.

Figure 5-7B When the R wave is missing, measure from the junction of the Q and S waves.



QRS complex and the other point placed on the next QRS complex. The interval should be evaluated throughout at least a 6-second strip to determine the rhythm of the QRS complexes.

Step 2: Determining the Atrial and Ventricular Rates

The method used to calculate the heart rate is based on whether the rhythm is regular or irregular. The heart rate must be determined for both atria and ventricles. The atrial rate is determined by the P-P wave interval measurements, and the ventricular rate is determined by the R-R wave interval measurements. The atrial and ventricular rates are usually the same; sometimes, however, the rates may be different due to conditions occurring in the myocardium. It is important to note if the atrial rate is different from the ventricular rate because this will help narrow the selection of possible dysrhythmias. The methods used to approximate the rates are described in the following sections.

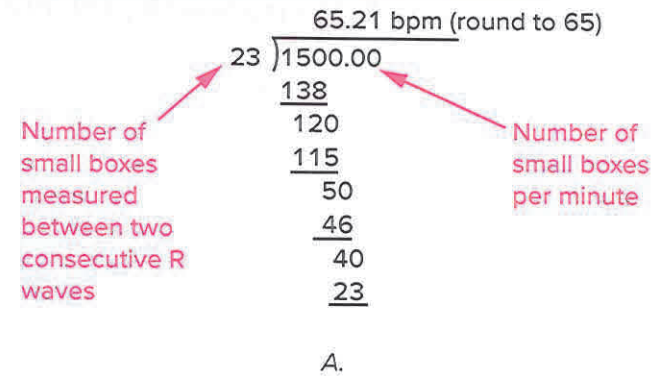
Regular Rhythm

If you have determined that the rhythm is regular, you can use the 1500 or 300 (R-R) method to calculate the atrial and ventricular rates. This 1500 method of calculation provides the most accurate heart rate estimation, similar to measuring a person's pulse.

For the 1500 method, place the caliper interval of the P-P measurement at the top or bottom of the ECG paper, away from the tracing, to determine the number of small boxes. Remember that each small box is equal to 0.04 second. Use the procedure described in the *Electrocardiograph* chapter, dividing the number of boxes into 1500 to calculate the atrial rate (Figure 5-8A). Then use the same procedure to calculate the ventricular rate, except count the number of small boxes between the QRS complexes. Figure 5-8B shows a rate calculator that can be used to determine rates for regular rhythms.

Irregular Rhythm

When the rhythm is irregular, as determined in step 1, the interval between the P waves or the QRS complexes is not constant. To determine the heart rate for an irregular rhythm, use the 6-second method: Multiply the number of P waves and QRS complexes in a 6-second strip by 10. Although this technique is the only one that can be used for irregular rhythms, it can also



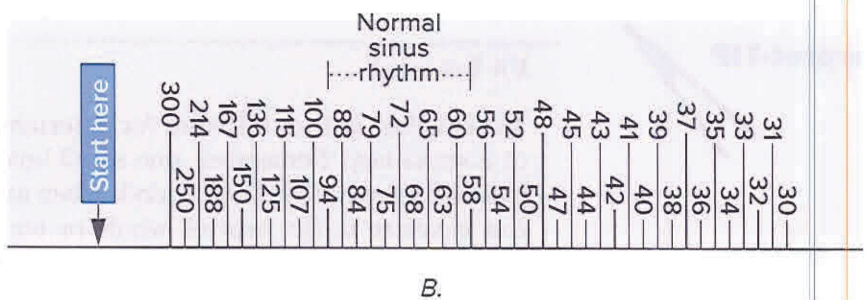


Figure 5-8 *A.* Divide the number of small boxes measured between two P or two R waves into the number of small boxes per minute, which is 1500 at the standard speed. This calculation has been carried out to two decimal places and then rounded to the nearest whole beat per minute. *B.* A rate calculator like this one can also be used for regular rhythms. The start mark is placed at the first P wave or R wave, whichever you are using. Where the next consecutive P or R wave lines up is the approximate heart rate.

be used for a quick approximation of heart rate for regular rhythms. This method is often used in emergencies to determine an estimated heart rate (pulse rate) for the patient.

Interpret-TIP

Many variables affect the QT interval, including heart rate, coronary heart disease, electrolyte imbalance, and antidysrhythmic medications. A shorter or longer than normal QT interval may indicate that the patient is at an increased risk for certain dysrhythmias and sudden death.

Step 3: Identifying the P Wave Morphology

Analyzing P waves and their relationship with the QRS complex is necessary to determine the type of dysrhythmia. The P wave reflects the atrial depolarization and how the electrical current is moving through the atria. The relationship between the P wave and QRS complex provides information regarding the coordination between atrial and ventricular depolarization. Several questions need to be answered when analyzing the P wave.

- *Are the shapes and waveforms all the same?* If they appear to be different, the current is moving through the atria using more than one pathway. Sometimes the P wave may not occur, or it may be buried within the QRS complex or the previous T wave.
- *Does each P wave have a QRS complex following it?* In normal conduction pathways, the QRS complex always follows the P wave. If there are additional P waves or QRS complexes present without a P wave, the normal conduction pathway may not have been used, and the atria and ventricles are not contracting together.

Step 4: Measuring the PR Interval

The PR interval measures the length of time it takes the electrical current to be initiated at the sinoatrial node and travels through the electrical conduction pathways within the atria to the AV node. The PR interval essentially represents all electrical activity within the atria prior to being released by the AV node into the ventricular conduction system.

In a normal heart, this occurs prior to ventricular depolarization. The PR interval is determined by measuring from the beginning of the P wave to the beginning of the QRS complex. The Q wave is the first indication of ventricular depolarization. Not all tracings will show a Q wave. In the absence of a Q wave, the second caliper tip is placed at the beginning of the R wave. The normal range of the PR interval is 0.12 to 0.20 second (Figure 5-9).

Interpret-TIP

PR Interval

The smallest unit of measure for determining measurements is one-half of a small box. Remember, one small box represents 0.04 second. One-half of 0.04 second is 0.02 second. When analyzing a rhythm tracing, you can measure to the nearest whole or one-half of a small box. Smaller measurements are not possible with the human eye; only a computer can read less than one-half of a box accurately. Therefore, the time interval you record when measuring manually should always be in multiples of 0.02 second.

PR intervals are also evaluated to ensure that the measurements are the same from one PR interval to the next. If the intervals have different measurements, either the electrical current is being delayed for some reason or it may be originating from locations other than the sinoatrial node.

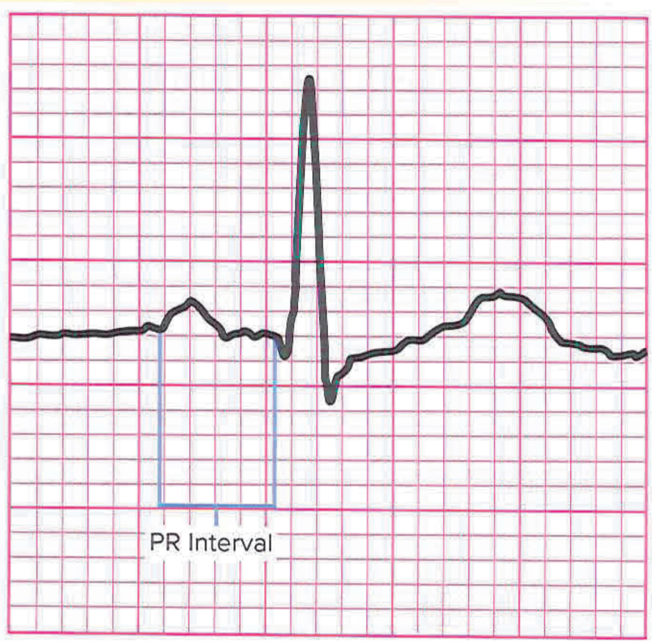


Figure 5-9 The PR interval measured from the beginning of the P wave to the first indication of ventricular depolarization, which is usually the Q wave (downward portion) beginning of the QRS complex.

Step 5: Measuring the QRS Duration and Analyzing the Morphology

Measuring the QRS complex is essential in determining the duration of time it takes for the ventricles to depolarize. This information is helpful in discriminating between different dysrhythmias. If the QRS complex is narrow, or within the normal limits of 0.06 to 0.10 second, current has traveled through the normal ventricular conduction pathways to activate the ventricles to contract. When the QRS complex is wide, 0.12 second or greater, depolarization of the ventricles is taking longer than normal.

To measure the QRS duration and morphology, place the first caliper point where the QRS complex starts and the second point at the J point (Figure 5-10). The J point is located where the S wave stops and the ST segment is initiated. It marks the point at which ventricular depolarization is completed and repolarization begins. It is important to carefully identify this ending point of the QRS complex because the ST segment may not be at the isoelectric line.

Interpret-TIP

QRS Measurement

Although a QRS measurement of 0.11 second is still considered within the normal range, this measurement can be provided only by an ECG machine. The human eye cannot discern less than 0.5 mm measurements.

Several questions need to be answered when determining the QRS measurement and morphology (Figure 5-11). Specifics about how to answer these questions will be discussed when learning about abnormal rhythms.

- Are all the QRS complexes of equal duration (width)?
- What is the actual measurement, and is it within the normal limits?

Figure 5-10 The J point is where the S wave stops and the ST segment starts.

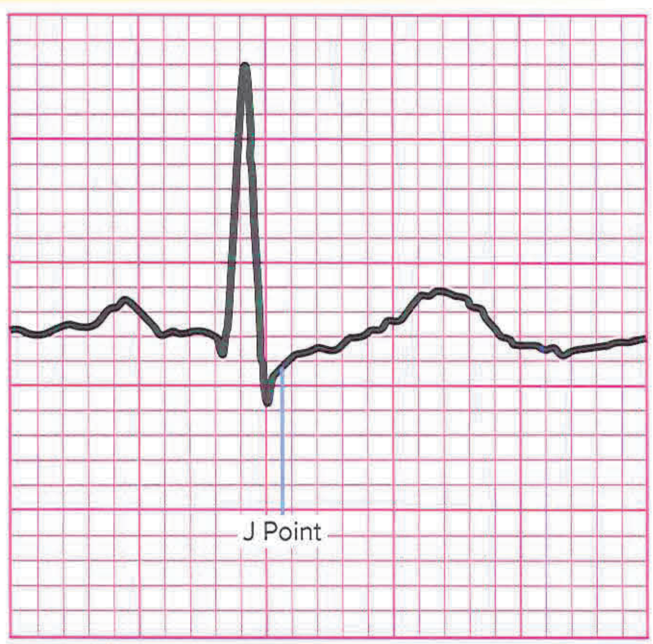
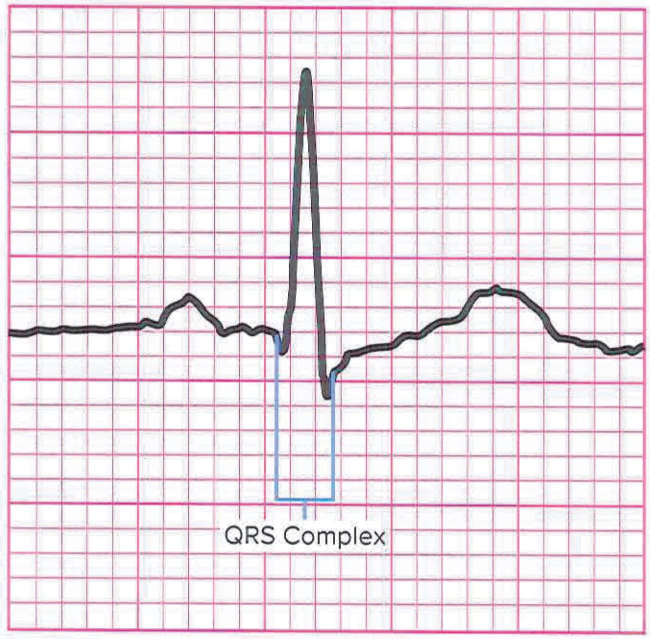


Figure 5-11 Measure the QRS duration from the beginning of the QRS complex to the J point.



- Do all QRS complexes look alike? If not, are the unusual QRS complexes associated with a premature or ectopic complex?
- Do all QRS complexes follow a P wave? If not, it is most likely a dysrhythmia.

After you have completed these five steps of identifying the components of the rhythm, you will then compare the information to the specific criteria for classifying each of the dysrhythmias. The rest of this chapter explains the specific criteria for classification that will help you identify the various sinoatrial node-related ECG rhythms.

Checkpoint Questions (LO 5.3)

1. Name the five components that must be evaluated on a rhythm strip.

2. A regular rhythm has 19 small boxes between two consecutive P waves. What is the heart rate?

3. After you measure the QRS duration and morphology, what other questions need to be answered?

Chapter Summary

Learning Outcomes	Summary	Pages
5.1 Describe the heart activity that produces each part of the ECG waveform.	The ECG waveform includes the P wave, QRS complex, T wave, U wave (not always seen), PR interval, QT interval, and ST segment. The parts of the ECG waveform are created by the electrical activity of the heart, including atrial and ventricular depolarization and repolarization.	126–130
5.2 Explain the process of evaluating ECG tracings and determining the presence of dysrhythmias.	Evaluating an ECG requires basic knowledge of the waves, segments, and intervals of the tracing and the rate, rhythm, and regularity of the heartbeat.	130–131
5.3 Describe the criteria used to classify the dysrhythmias, including rhythm, rate, P wave morphology, PR interval measurement, and QRS duration measurement.	The process of evaluating an ECG tracing includes determining the ECG rhythm or regularity, determining the atrial and ventricular rates, identifying the P wave morphology, measuring the PR interval, measuring the QRS duration, and analyzing the morphology.	132–138

Chapter Review

Matching

Match the terms related to rhythm strip interpretation on the left with their definitions on the right.

_______ 1. complex
_______ 2. interval
_______ 3. polarization
_______ 4. repolarization
_______ 5. depolarization
_______ 6. morphology
_______ 7. J point
_______ 8. action potential
_______ 9. isoelectric line

a. peak resting energy state
b. rapid sequence of changes in the voltage across a membrane
c. overall form and structure of waveforms
d. a series of waveforms
e. the time between two activities in the heart
f. where depolarization ends and repolarization starts
g. heart muscle cells return to their resting electrical state
h. where the ECG tracing is a zero electrical state
i. electrical activation of the cells of the heart

Multiple Choice

Select the correct answer.

10. The PR interval is usually (LO 5.1)
- **a.** 0.06 to 0.10 second.
- **b.** 0.12 to 0.20 second.
- **c.** greater than 0.20 second.
- **d.** less than 0.06 second.

11. What part of the ECG tracing represents the repolarization of the Purkinje fibers? (LO 5.1)
- **a.** T wave
- **b.** PR interval
- **c.** U wave
- **d.** P wave

12. What part of the ECG tracing represents the time from the start of the atrial activity to the start of ventricular activity? (LO 5.1)
- **a.** QRS complex
- **b.** J point
- **c.** QT interval
- **d.** PR interval

13. What part of the ECG tracing is measured from the end of the S wave to the beginning of the T wave and is normally on the isoelectric line? (LO 5.1)
- **a.** ST segment
- **b.** QT segment

c. U wave
d. QRS complex

14. What wave on the ECG tracing is not always seen and sometimes, when seen, can indicate an electrolyte imbalance? (LO 5.1)
    a. U wave
    b. P wave
    c. Q wave
    d. R wave

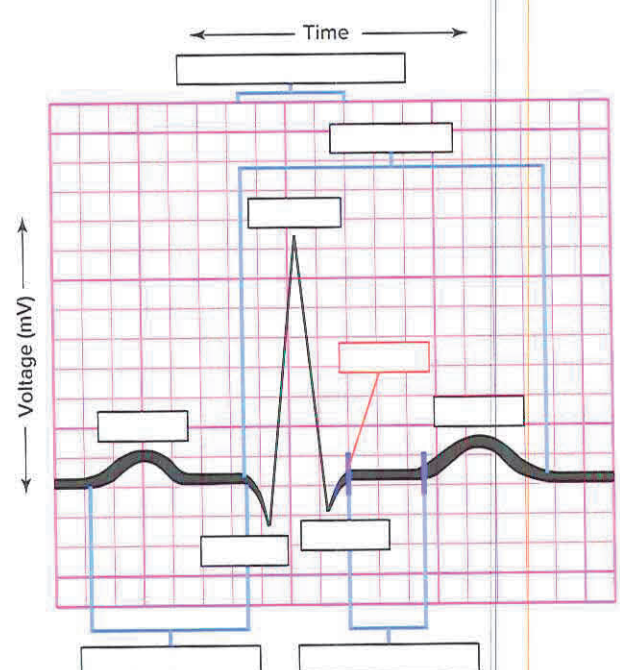
15. Which question does *not* need to be answered when determining the QRS measurement? (LO 5.3)
    a. Are all the QRS complexes of equal amplitude?
    b. What is the actual QRS measurement, and is it within the normal limits?
    c. Do all QRS complexes look alike?
    d. Is the R-R pattern regular?

16. The normal PR interval is (LO 5.3)
    a. 0.04 to 0.10 second.
    b. 0.12 to 0.20 second.
    c. 0.22 to 0.26 second.
    d. 0.28 to 0.32 second.

17. If a QRS complex measures 0.12 second or wider, it indicates (LO 5.3)
    a. normal ventricular conduction.
    b. delayed ventricular conduction.
    c. increased delay at the AV node.
    d. myocardial infarction.

Label the Parts

18. a.–j. Label the waves, complexes, intervals, and segments of the ECG waveform by writing the letters in the appropriate boxes. (LO 5.1)
    a. S wave
    b. R wave
    c. P wave
    d. T wave
    e. Q wave
    f. QT interval
    g. ST segment
    h. QRS complex
    i. PR interval
    j. J point



Critical Thinking Application *What Should You Do?*

Read the following situation, and use your critical thinking skills to determine how you would handle it. Write your answer in detail in the space provided.

19. How would you best describe the process of rhythm strip interpretation to your friend who is considering taking a class? (LO 5.2)

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connect Now that you have completed the material in the textbook, go to Connect and complete any chapter activities you have not yet done.

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