

How to decipher the results of an ECG:

Buying a **PC based Resting ECG** for the first time? Gone are days where traditional ECG systems needed space for storage. With a PC based ECG system, you can read the results on your laptop or desktop screen. Here is a short guide that demonstrates how to read an ECG systematically and effectively.



Step 1: HEART RATE

To calculate the heart rate, follow this method:

1. for a regular rhythm, count the number of large squares present within one R-R interval
2. divide 300 by this number to calculate the heart rate

If the rhythm is irregular:

1. count the number of complexes on the rhythm strip with each rhythm strip is 10 seconds long
2. multiply the number of complexes by six by giving you the average number of complexes in one minute

A normal adult heart rate is as follows:

- One Normal = 60 – 100 bpm
- One Tachycardia > 100 bpm
- One Bradycardia < 60 bpm

Step 2: HEART RHYTHM

The heart rhythm can be regular or irregular. Irregular rhythms can be either:

- one regularly irregular (i.e. a recurrent pattern of irregularity)
- one irregularly irregular (i.e. completely disorganized)
- if you notice anything then mark out several consecutive R-R intervals on a piece of paper, then move them along the rhythm strip to check if the subsequent intervals are the same

If you are suspicious that there is some atrioventricular block, map out the atrial rate and the ventricular rhythm separately.

Step 3: CARDIAC AXIS

The cardiac axis describes the overall direction of electrical spread within the heart. In a healthy individual, the axis should spread from 11 o'clock to 5 o'clock. To determine the cardiac axis, you need to look at leads I, II and III.

Normal cardiac axis

In a normal cardiac axis, I Lead II has the most positive deflection compared to Leads I and III

Right axis deviation

One in the right axis deviation, Lead III has the most positive deflection and Lead I should be negative This is commonly seen in individuals with right ventricular hypertrophy

Step 4: P-WAVES

Next, we look how the P-waves look for their presence. Also, check whether each P-wave is followed by a QRS complex. Check the variations in duration, direction and shape of P-waves. Check whether there is any atrial activity e.g. sawtooth baseline → flutter waves/chaotic baseline → fibrillation waves / flat line → no atrial activity at all or not.

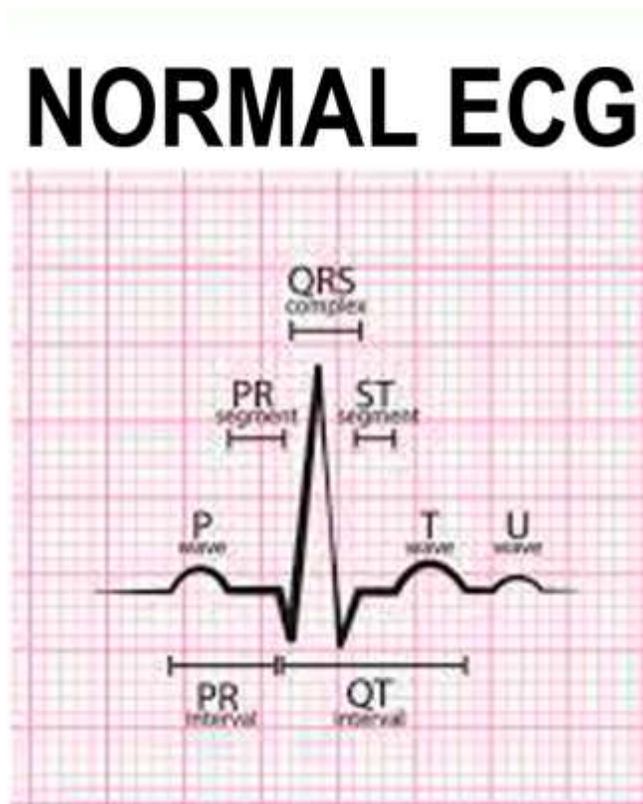
Step 5: QRS COMPLEX

There are several aspects of the QRS complex you need to assess: width, height and morphology.

This a short guide to read ECG however, there a lot of things that a technician should study while learning to read the results of an ECG.

To improve accuracy, get real-time patient diagnostic information, enhance your efficiency and send your diagnosis to the proper healthcare provider in a timely way, use **PC-based CardioCard ECG Systems today!**

What are you waiting for? [Request a demo today!](#)



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About Nasiff

Founded in 1989, Nasiff Associates is a medical technology company and leader in diagnostic cardiology medical devices including ECG/EKG devices and systems. The first company to produce a clinically useful PC-based CardioResting™ ECG, PC-based CardioStress™ (Stress ECG), CardioHolter™ (Monitor), CardioSuite® ECG System (all-in-one cardiology system consisting of Resting, Stress and Holter) and CardioVitals™. All products are developed and manufactured in the USA to maintain top quality control and unsurpassable customer care. All systems come complete with the Cardio Universal EMR Interface™. More information about Nasiff products can be found at www.nasiff.com.