**NORMAL VALUE ECG**

A normal ECG is illustrated above. Note that the heart is beating in a regular sinus rhythm between **60 - 100** beats per minute (specifically **82** bpm). All the important intervals on this recording are within normal ranges.

**1. P wave:**

Upright in leads I, aVF and V3 - V6

Normal duration of less than or equal to **0.11** seconds

Polarity is positive in leads I, II, aVF and V4 - V6;

diphasic in leads V1 and V3; negative in aVR

Shape is generally smooth, not notched or peaked

**2. PR interval:**

Normally between **0.12** and **0.20 seconds**.

**3. QRS complex:**

Duration less than or equal to **0.12** seconds,

amplitude greater than **0.5 mV** in at least one standard lead,

and greater than 1.0 mV in at least one precordial lead.

Upper limit of normal amplitude **is 2.5 - 3.0** mV.

Small septal Q waves in I, aVL, V5 and V6

(duration less than or equal to **0.04** seconds; amplitude less than **1/3** of the amplitude of the R wave in the same lead).

represented by a positive deflection with a large, upright R in leads I, II, V4 - V6 and a negative deflection with a large, deep S in aVR, V1 and V2

in general, proceeding from V1 to V6, the R waves get taller while the S waves get smaller. At V3 or V4, these waves are usually equal.

This is called the transitional zone.

**4. ST segment:**

isoelectric, slanting upwards to the T wave in the normal ECG

can be slightly elevated (up to **2.0 mm** in some precordial leads)

never normally depressed greater **than 0.5 mm** in any lead

**5. T wave:**

T wave deflection should be in the same direction as the QRS complex in at least 5 of the 6 limb leads

normally rounded and asymmetrical, with a more gradual ascent than descent

should be upright in leads V2 - V6, inverted in aVR

amplitude of at least **0.2 mV** in leads V3 and V4 and at least **0.1 mV** in leads V5 and V6

isolated T wave inversion in an asymptomatic adult is generally a normal variant

6. QT interval:

Durations normally less than or equal to **0.40** seconds for males and **0.44** seconds for females.