

Pet:	
Owner:	
Referring Vet:	Appointment Date:

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### ECG INTERPRETATION

**Calibration:** 1 mV = \_\_\_\_\_ mm (1 box = \_\_\_\_\_ mV)      1 sec = \_\_\_\_\_ mm (1 box = \_\_\_\_\_ sec)

#### Rate and Rhythm

**Heart Rate:** \_\_\_\_\_ per minute (Normal dog: Giant 60-140, Med-Lg 70-160, Toy 80-180, puppy 70-220)  
(Normal cat: 100-240)

**Normal Rhythm:** Sinus rhythm  Respiratory Sinus Arrhythmia

**Tachycardia** - Sinus tachycardia  Supraventricular Tachycardia  Ventricular Tachycardia

Re-entry rhythm

**Bradycardia** - Sinus bradycardia  2<sup>nd</sup> degree AV block (type I)  2<sup>nd</sup> degree AV block (type II)

3<sup>rd</sup> degree AV block

**Variable heart rate** - Sick Sinus Syndrome  Atrial fibrillation  Periods of asystole

**Abnormal pacemaker:** Idioventricular rhythm  Other

**Intermittent arrhythmia:** Unifocal VPCs  Multifocal VPCs  Ventricular bigeminy  Vtach bursts

#### Measurements (Lead II)

#### Normals

**P wave:** height \_\_\_\_\_ mV width \_\_\_\_\_ sec

**Dog:** <0.4 mV <0.04 sec

**Cat:** <0.2 mV <0.04 sec

**PR interval:** \_\_\_\_\_ sec

**Dog:** 0.06-0.13 sec

**Cat:** 0.05-0.09 sec

#### QRS:

QRS width \_\_\_\_\_ sec

R height \_\_\_\_\_ mV

S depth \_\_\_\_\_ mV

**Dog <40lbs:** <0.05 sec

**Dog >40 lbs:** <0.06 sec

**All Dogs:** <3.0 mV

**All Dogs:** <0.8 mV

**Cat:** <0.04 sec

**Cat:** <0.9 mV

**Cat:** <0.8 mV

**QT interval:** \_\_\_\_\_ sec

**Dog:** 0.15-0.25 sec

**Cat:** 0.07-0.24 sec

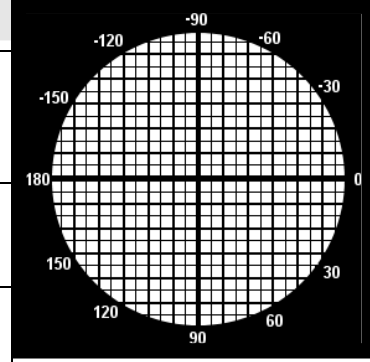
**Mean Electrical Axis:** (normal dog 40° to 100°) (normal cat 0° to 160°)

#### Estimate:

#### Calculate by Graph:

Isoelectric lead	MEA	Isoelectric lead	MEA
Lead I (+ in aVF) Lead I (-in aVF)	+90° -90°	Lead aVR (+ in III) Lead aVR (-in III)	+120° -60°
Lead II (+ in aVL) Lead II (- in aVL)	+150° -30°	Lead aVL (+ in II) Lead aVL (-in II)	+60° -120°
Lead III (+ in aVR) Lead III (- in aVR)	+30° -150°	Lead aVF (+ in I) Lead aVF (-in I)	0° ±180°

<b>Lead I:</b> (x axis)	High: _____ Low: _____ Net: _____
<b>Lead aVF:</b> (y axis)	High: _____ Low: _____ Net: _____
<b>MEA</b>	<b>Vector:</b>



#### Conclusions:

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## ECG Key

**Calibration:** 1 mV = 10 mm (1 box = 1 mV)

1 sec = 25 mm (1 box = 0.04 sec)

1 sec = 50 mm (1 box = 0.02 sec)

### Measurements

#### P wave:

Wide P wave, notched P wave – LA enlargement

Tall spiked P wave - RA enlargement, P pulmonale

Varying P wave – “wandering pacemaker,” increased vagal tone (heart failure not likely), chronic respiratory disease is one possible cause

Lack of P wave – atrial standstill

Dropped P waves – SA block (2<sup>nd</sup> degree)

#### PR interval:

Short PR interval – accessory pathway

Long PR interval – AV Block

Every P wave followed by a QRS – 1<sup>st</sup> degree AV block – cue to increased vagal tone

Some P waves not followed by a QRS – 2<sup>nd</sup> degree AV block

Mobitz Type 1 – PR progressively longer until a QRS is dropped

Mobitz type 2 – QRS randomly dropped

P waves and QRS complexes not related – each has its own rate (QRS slower) – 3<sup>rd</sup> degree AV block

#### QRS:

Wide QRS – bundle branch block, LV enlargement

Tall R – LV enlargement, Left Bundle Branch Block

#### ST segment:

Greater than 0.1 mV off baseline in cats and 0.2 mV in dogs – regional myocardial hypoxia, hypothermia, hypokalemia, digitalis toxicity

#### Mean Electrical Axis:

MEA <40 in the dog or <0 in the cat – Left Axis shift

HCM

Left Bundle Branch Block

MEA >100 in the dog or >160 in the cat – Right Axis Shift

RV enlargement

Right Bundle Branch Block

