

## EKG

### Leads

Anterior – V1, V2, V3, V4

Inferior – II (+60°), III (+120°), AVF (+90°)

Left lateral – I (0°), AVL (-30°), V5, V6, AVR (-150°)

**Standardization** – 1 mV. (0.2 s per big box)

**HR** – 300, 150, 100, 75, 60, 50

**Intervals** – PR < 0.2, QRS < 0.1, QT 40% of RR

**QRS axis** – normal (I+, AVF+), Lt (I+, AVF-), Rt (I-, AVF+)

**Rhythm** – normal P, narrow QRS, P b4 QRS, regular

**AV block** – 1° PR>0.2; Mobitz I prolong PR, dropped QRS; Mobitz II dropped QRS; 3° no QRS

**Bundle branch block** – QRS > 0.12

Rt: RSR in V1, V2 w/ ST depression, T inversion;

Lt: Lt axis deviation, broad notched R in V5, V6, I, AVL w/ ST depression, T inversion,

**Preexcitation** – PR<0.12, wide QRS, delta wave

**Lt Hypertrophy** –

(R in V5, V6) + (S in V1, V2) > 35

(R in I) + (S in III) > 25

(R in V6) > (R in V5)

R in V5>26; V6>18; AVL>13; AVF>21; I>14

**MI** – T wave peaks then inverts, ST elevation, Q waves (>0.04s, 1/3 of R)

non-Q – T inversion, ST depression > 48 hr

**Hyperkalemia** – peaked T, PR prolong, P flattening, QRS widening

**Hypokalemia** – ST depression, T flattening, U waves

**Hypocalcemia** – prolonged QT

**Hypercalcemia** – shortened QT

**Pericarditis** – diffuse ST, T changes

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## Chest X-ray 101

**Is this your patient?**

**Is it AP, PA, lateral, oblique?**

**Is it a good X-ray?**

**Exposure**- intervertebral spaces through the cardiac silhouette

**Position**- rotation, spinous processes should be midline.

**Inspiration**- check for full inspiration (10 ribs)

**A: Airway**- tracheal position, patency, presence of intubation tubes (2 cm above carina)

**B: Bones**- fractures, dislocations, arthritic changes, lesions

**C: Cardiac**- size (>50% chest diameter = cardiomegaly vs. pleural effusion), borders, mediastinal widening.

**D: Diaphragms**- free air under diaphragm, equal level, costophrenic angles for blunting.

**E: Everything else-**

-*Lung fields* - infiltrates, masses, pleural effusions

Normal lung markings way out to chest wall (r/o pneumothorax)

Kerley B lines at lung bases (CHF)

prominent hilum (?lymphadenopathy)

-*Soft tissues*- symmetry, subcut air, edema, breast tissue.

-Placement of *lines, tubes, drains*

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## Electrolyte Management

**\*\*must correct Mg prior to Ca, K\*\***

	Normal	Effect	IV	Oral	Comments
<b>Mg</b>	1.8-2.5 mg/dl	1g MgSO4 → increases by 0.4mg/dl	If Mg<1.2 or had sx – MgSO4 in 100ml IV @ 1g/hr	If Mg>1.2 and no sx - 400-800mg Mg oxide po tid	Reduce for renal failure or if <50kg
<b>K</b>	3.5-5.0 mg/dl	10mEq → increases by 0.1	KCl @ 10mEq/hr	If K>3.8 and no sx, KPhos tablets 40-100 mEq/day in 2-4 divided doses	Reduce for renal failure
<b>Ca</b>	8.5-10.5 mg/dl	1g calcium gluconate IV → increases by 0.4 mg/dl	1g Ca gluconate in 100 ml IV @ 100 ml/hr	*ORAL IF POSSIBLE* give Ca carbonate (Tums), 1 tab tid	corrected [Ca] = (4.0 – alb) * (0.8) + measured [Ca]
<b>Phos</b>	2.4-4.7 mg/dl	15mmol → increases by 1.2 mg/dl	If K <3.5, use KPhos, If K>4.5, use NaPhos 15mmol in 250 ml over 4-6hr	KPhos 250mg tab tid	If [Ca]*[phos] > 60, risk of ppt