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🧪 Lab Values – NCLEX Notes

1. Complete Blood Count (CBC)

- **Hemoglobin (Hgb)**
  - Female: **12–16 g/dL**
  - Male: **14–18 g/dL**
  - 🔻 Low = anemia, hemorrhage → **watch for SOB, pallor, fatigue**
  - 🔺 High = polycythemia → **risk for clots, stroke, MI**
- **Hematocrit (Hct)**
  - Female: **37–47%**, Male: **42–52%**
  - Ratio: **Hgb x 3** (e.g., 12 Hgb → 36 Hct)
  - 🔻 Low = anemia, fluid overload
  - 🔺 High = dehydration
  - **NCLEX Tip**: If both Hgb & Hct are low → think bleeding/hemorrhage.
- **WBCs**: **5,000–10,000**
  - 🔻 Low (leukopenia) = immunosuppression → **neutropenic precautions**
  - 🔺 High (leukocytosis) = infection → **check for fever, sepsis signs**
- **Platelets**: **150,000–400,000**
  - 🔻 Low = bleeding risk → **no IM injections, fall precautions, bleeding precautions**

- 🔺 High = clotting risk (thrombosis)

2. Electrolytes

- **Sodium (Na+)**: **135–145 mEq/L**
  - 🔻 Hyponatremia = confusion, seizures → **seizure precautions**
  - 🔺 Hypernatremia = dehydration → **monitor neuro changes**
- **Potassium (K+)**: **3.5–5 mEq/L**
  - 🔻 Hypokalemia = flat T wave, muscle weakness → **risk for digoxin toxicity**
  - 🔺 Hyperkalemia = peaked T wave, arrhythmias → **risk for cardiac arrest**
  - ⚠️ **Never give K+ IV push** (always diluted, max 10 mEq/hr).
  - **NCLEX Tip**: If K+ abnormal → **priority = cardiac monitor & prepare antidote (Kayexalate/Insulin+Glucose for high K+).**
- **Calcium (Ca^{2+})**: **9–10.5 mg/dL**
  - 🔻 Hypocalcemia = Trousseau's & Chvostek's signs, tetany → **risk for seizures**
  - 🔺 Hypercalcemia = kidney stones → **fluids, mobility**
- **Magnesium (Mg^{2+})**: **1.3–2.1 mEq/L**
  - 🔻 Low = Torsades de Pointes, V-Fib → **priority emergency**
  - 🔺 High = ↓DTRs, respiratory depression → **antidote = calcium gluconate**
  - **NCLEX Tip**: Watch Mg in preeclampsia patients on magnesium sulfate.
- **Phosphorus (Phos)**: **2.5–4.5 mg/dL**
  - Inverse with Calcium (if one is up, the other is down).

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3. Glucose & Diabetes Labs

- **Glucose**: **70–110 mg/dL**
    - 🔻 Low = hypoglycemia → confusion, sweating, seizures
    - 🔺 High = hyperglycemia → polydipsia, polyuria, polyphagia
- **HbA1C**:
    - Normal: **<5.6%**
    - Prediabetes: **5.7–6.4%**
    - Diabetes: **≥6.5%**
    - Goal for diabetics: **<7%**
    - **NCLEX Tip**: HbA1C shows **long-term control (3 months average)**, not day-to-day.

4. Kidney & Liver Function

- **BUN**: **10–20** (elevated = dehydration/kidney disease)
- **Creatinine**: **0.6–1.2** (more specific to kidney function)
- **GFR**: **>90 normal** (below 60 = kidney disease)
- **AST/ALT/ALP** = liver enzymes → high = liver damage (e.g., hepatitis, alcohol, meds).
- **Bilirubin**: <1 → high = jaundice.

5. Lipids & Cardiac Labs

- **Cholesterol**: <200
- **HDL** (good): >55
- **LDL** (bad): <130
- **Triglycerides**: <160
- **Troponin**: <0.4 → >0.5 = MI (heart attack)
    - **NCLEX Tip**: #1 cardiac lab for MI diagnosis.
- **BNP**: <100 → high = CHF

6. Coagulation Studies

- **aPTT**: 30–40 sec (Heparin therapy = 46–70 sec)
- **PT**: 10–12 sec
- **INR**: 0.9–1.2
    - Warfarin therapy: 2–3 (never >4 = bleeding risk)
- **Antidotes**:
    - Heparin → Protamine sulfate
    - Warfarin → Vitamin K
- **NCLEX Tip**: If INR is high→ **HOLD warfarin, assess for bleeding, prepare antidote, notify HCP**.

7. ABG Values

- **pH**: 7.35–7.45
- **$PaCO_2$**: 35–45
- **HCO_3^-**: 22–28

NCLEX Tip for ABGs:

- pH & CO_2 same direction = metabolic
- pH & CO_2 opposite = respiratory
- Normal CO_2 + abnormal HCO_3 = metabolic

8. Miscellaneous

- **D-dimer** <500 → high = clots (e.g., DVT, PE).
- **CRP** <1 → high = inflammation.
- **ESR** Male ≤15 / Female ≤20 → high = inflammation.

🔑 NCLEX “Must-Know” Points

- Always connect **lab value** → **symptom** → **intervention**.
- **Safety First**: If the lab is critical → stop med, assess patient, prepare antidote, call provider.

- Remember “**priority labs**” NCLEX likes to test:
    - K+, Na+, Ca^{2+}, Mg^{2+}
    - Hgb/Hct
    - Platelets
    - INR/PT/aPTT
    - Troponin & BNP
    - Glucose & HbA1C
    - ABGs

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📝 NCLEX Lab Values – Practice Worksheet

Section 1: Multiple Choice Questions (MCQs)

1. A patient's potassium level is **2.8 mEq/L**. Which symptom would the nurse expect?
A. Tall, peaked T waves
B. Flat T waves with presence of U wave
C. Severe muscle rigidity and tetany
D. Bounding peripheral pulses

2. A client on **warfarin** has an INR of **4.8**. What is the nurse's first action?
A. Continue the medication as ordered
B. Hold the medication and assess for bleeding
C. Give protamine sulfate
D. Encourage foods rich in Vitamin K immediately

3. A patient's lab values are: Na+ = **128 mEq/L**, Confusion, Seizures. Which intervention is priority?
A. Administer hypertonic saline (3% NaCl) as prescribed
B. Restrict fluids
C. Give IV Lasix
D. Monitor for kidney stones

4. A client's troponin level is **0.9 ng/mL**. Which interpretation is correct?
A. Normal finding
B. Sign of liver failure

C. Indicates myocardial infarction (MI)
D. Suggests dehydration

5. A patient's **platelet count** is **45,000**. What nursing intervention is MOST appropriate?
A. Administer IM injections for faster absorption
B. Encourage frequent ambulation
C. Implement bleeding precautions
D. Increase oral fluids

Section 2: True/False

6. An HbA1C of **6.2%** indicates well-controlled diabetes. (T/F)
7. Magnesium sulfate toxicity is treated with **Calcium gluconate**. (T/F)
8. An aPTT of **100 seconds** is normal for a client not on heparin therapy. (T/F)
9. D-dimer elevation suggests the presence of clots in the body. (T/F)
10. A BNP value of **>100** indicates possible heart failure. (T/F)

Section 3: Fill-in-the-Blank

12. The antidote for warfarin overdose is _____.
13. Hematocrit should be about ___ times the hemoglobin.
14. Hypocalcemia is commonly tested by two signs: _____ and _____.
15. The therapeutic INR range for a patient on warfarin is _____.

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✅ Answer Key

MCQs:

1. B – Flat T wave + U wave = hypokalemia
2. B – Hold med, assess, prepare antidote
3. A – Hypertonic saline for severe hyponatremia with seizures
4. C – Troponin >0.5 indicates MI
5. C – Bleeding precautions (no IM, avoid falls, soft toothbrush, etc.)

True/False:

6. False (6.2% = prediabetes, goal <7% for diabetics)
7. True
8. False (normal 30–40, therapeutic 46–70 if on heparin)
9. True
10. True

Fill-in-the-Blank:

12. Vitamin K
13. 3x (1:3 ratio)
14. Trousseau's & Chvostek's
15. 2–3