a Medical Analysis Guidebook

> This guidebook aims to provide a straightforward understanding of certain medical conditions and the diagnostic tests used to evaluate them. Diagnosing medical conditions often involves ruling out diseases based on specific test outcomes. This guide covers the following diseases and related diagnostic tests.

Diseases

1. Nephrotic Syndrome

- o A kidney disorder characterized by excessive protein in the urine, low blood levels of proteins, high cholesterol, and swelling of various body parts o It affects the kidney's ability to filter waste and excess water from the blood.
- 2. Pulmonary Embolism

o A blockage in one of the pulmonary arteries in the lungs, often caused by blood clots

- that travel to the lungs from the deep veins in the legs. o It's a serious condition that can result in damage to the lungs and other organs due to
- reduced oxygen levels in the blood

3. Pre-Diabetes

- o A health condition where blood sugar levels are higher than normal but not yet high enough to be classified as Type 2 diabetes.
- o Identifying pre-diabetes early can help prevent progression to Type 2 diabetes.

4. Brain Tumor

- o An abnormal growth of cells within the brain, which can be benign (non-cancerous) or malignant (cancerous)
- o Brain tumors can affect brain function depending on their size, type, and location.

Diagnostic Tests

b

1. Blood Glucose Test

- o Measures the amount of glucose (sugar) in your blood, which is imperative in diagnosing and monitoring diabetes
- Outcomes & Rule-Outs:
 - If blood alucose is between 0-99 or 126-500 mg/dL; Rule out Pre-Diabetes.

Knowledge book (partially shown)

Round 1 Reasoning

To begin narrowing down the possible diseases, I will start with the **Kidney Function Tests**. This test is directly related to Nephrotic Syndrome. If the result shows a level between 0-1.1 mg/dL, I can rule out that condition.

Kidney Function Test: 0.3100216288396742

Round 2 Reasoning

The result of the Kidney Function Test rules out Nephrotic Syndrome. Next, I choose the **D-Dimer Test** to evaluate the possibility of Pulmonary Embolism. If the levels are normal, that condition can be excluded.

Round 2 Observation D-Dimer Test: normal

Round 1 Observation

Round 3 Observation

Round 3 Reasoning

With Pulmonary Embolism ruled out, I now choose the **Brain MRI** to evaluate the possibility of a Brain Tumor. Normal findings would rule out a tumor.

Brain MRI: brain_lesions

Round 4 Reasoning

The abnormal MRI leaves Brain Tumor as a possibility, so I now evaluate Pre-Diabetes using the **HbA1c Test**. A reading within 0.0–5.6% or 6.5–15.0% would rule out Pre-Diabetes.

Round 4 Observation

HbA1c Test: 6.229062942910057

Round 5 Reasoning

Since the HbA1c result is within the borderline range. I proceed with the Blood Glucose Test. If the glucose level falls between 0-99 or 126-500 mg/dL, Pre-Diabetes can be ruled out.

Round 5 Observation

Blood Glucose Test: 314.75288407570395

Round 6 Reasoning

With all other conditions ruled out, the only remaining possibility is a Brain Tumor. I therefore conclude that the diagnosis is Brain Tumor.

Round 6 Observation

Final Prediction: Brain Tumor

Gameplay trajectory (DeepSeek V3)

