



14 Billion Lab Tests



Test Results



Physician



Patient

2

1

General Comments & Additional Information
Clinical Info: NORMAL REPORT

Ordered Items
Comp. Metabolic Panel (14)

TESTS	RESULT	FLAG	UNITS	REFERENCE INTERVAL
Comp. Metabolic Panel (14)				
Glucose	95		mg/dL	65 - 99
BUN	20		mg/dL	6 - 24
Creatinine	1.00		mg/dL	0.76 - 1.27
eGFR If NonAfricn Am	90		mL/min/1.73	>59
eGFR If Africn Am	105		mL/min/1.73	>59
BUN/Creatinine Ratio	20			
Sodium	140		mmol/L	9 - 12
Potassium	4.0		mmol/L	134 - 145
Chloride	99		mmol/L	3.5 - 4.5
Carbon Dioxide, Total	25		mmol/L	20 - 28
Calcium	9.0		mg/dL	8.7 - 9.7
Protein, Total	7.0		g/dL	4.0 - 5.0
Albumin	4.5		g/dL	1.5 - 2.2
Globulin, Total	2.5		g/dL	1.2 - 2.2
A/G Ratio	1.0			0.0 - 1.2
Bilirubin, Total	1.0		mg/dL	0.0 - 1.2
Alkaline Phosphatase	1.0		g/dL	0.0 - 1.2
AST (SGOT)				
ALT (SGPT)				

General Comments & Additional Information
Clinical Info: NORMAL

Ordered Items
Lipid Panel

TESTS	RESULT	FLAG	UNITS	REFERENCE INTERVAL	LAB
Lipid Panel					
Cholesterol, Total	141		mg/dL	100 - 199	01
Triglycerides	122		mg/dL	0 - 149	01
HDL Cholesterol	97		mg/dL	>39	01
VLDL Cholesterol Cal	20		mg/dL	5 - 40	
LDL Chol Calc (NIH)	24		mg/dL	0 - 99	

General Comments & Additional Information
Clinical Info: NORMAL REPORT

Ordered Items
CBC With Differential/Platelet

TESTS	RESULT	FLAG	UNITS	REFERENCE INTERVAL	LAB
CBC With Differential/Platelet					
WBC	6.5		x10E3/uL	3.4 - 10.8	01
RBC	4.58		x10E3/uL	3.77 - 5.28	01
Hemoglobin	12.2		g/dL	11.1 - 15.9	01
Hematocrit	38.3		%	34.0 - 46.6	01
MCV	90		fL	79 - 97	01
MCH	28.5		pg	26.6 - 33.0	01
MCHC	32.1		g/dL	31.5 - 35.7	01
RDW	13.1		%	11.7 - 15.4	01
Platelets	225		x10E3/uL	150 - 450	01
Neutrophils	50		%	Not Estab.	01
Lymphs	35		%	Not Estab.	01
Monocytes	13		%	Not Estab.	01
Eos	2		%	Not Estab.	01
Baso	3.3		%	Not Estab.	01
Neutrophils (Absolute)	2.3		x10E3/uL	1.4 - 7.0	01
Lymphs (Absolute)	0.8		x10E3/uL	0.7 - 3.1	01
Monocytes (Absolute)	0.1		x10E3/uL	0.1 - 0.9	01
Eos (Absolute)	0.0		x10E3/uL	0.0 - 0.4	01
Baso (Absolute)	0.0		x10E3/uL	0.0 - 0.2	01
Immature Granulocytes	0.0		%	Not Estab.	01
Immature Grans (Abs)	0.0		%	Not Estab.	01
NRBC	0.0		%	0 - 0.1	01



DRLOGY PATHOLOGY LAB
Accurate | Caring | Instant

123456789 | 0912345678
drlgypathlab@drlogy.com

Sample Collected At:
125, Shiv complex, S G Road, Mumbai
Sample Collected By: Mr. Suresh
Ref. By: Dr. Hiren Shah

Registered on: 02/11/2023 PM 02:28
Collected on: 03/11/2023 PM 02:28
Reported on: 04/11/2023 PM 02:28

COMPREHENSIVE METABOLIC PANEL (CMP)

Result	Reference Value	Unit
Serum (2 ml)	TAT: 1 day (Normal: 1-3 days)	
55.00	15.00 - 40.00	U/L
56.00	10.00 - 49.00	U/L
45.00	30.00 - 120.00	U/L
1.00	0.30 - 1.20	U/L
6.50	5.70 - 8.20	mg/dL
3.50	3.20 - 4.80	g/dL
120.00	> 60.00	g/dL
	70.00 - 99.00	mL/min/1.73 m ²
	135.00 - 145.00	mg/dL
	3.50 - 5.00	mmol/L
	8.50 - 10.50	mmol/L
	7.00 - 20.00	mg/dL
	0.60 - 1.30	mg/dL

Dr. Payal Shah
(MD, Pathologist)

Dr. Vimal Shah
(MD, Pathologist)

Sample Collection
Generated on: 02 Dec 2023 05:50 PM
0123456789



???



BLOODWISE AI CHATBOT

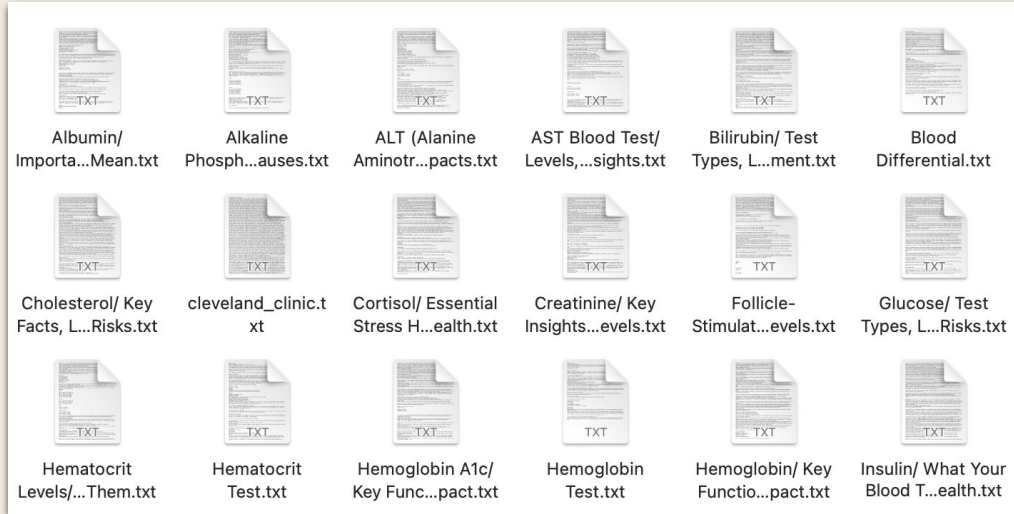
Free, AI-driven Health Insights

UNIQUE VALUES

- Comprehensive Analyses:
 - BMPs
 - CMPs
 - CBCs
- Offers **personalized, interpretable** explanations, with accompanying **nutritional recommendations**
- Existing blood-test interpretation software is:
 - **Expensive**
 - Uses **proprietary** tests
 - **Incompatible** with natural-language interpretations



Data



Web scrapped blood test related knowledge



Model

Gemini 1.5

Model
Response

Q&A Dataset

```
"question": "What does a high white blood cell count signify, and what are the possible causes?",  
"answer": "Hello, this is your medical guide. I'm here to help you understand your blood test results. A high white blood cell count, or leukocytosis, can indicate an infection, inflammation, or other medical conditions. It's important to note that this test result alone doesn't diagnose a specific condition. The cause of a high white blood cell count can range from a simple viral infection to more serious issues like leukemia. We'll need to look at the specific types of white blood cells elevated and your overall symptoms to determine the best course of action. Factors like stress, medication, and even recent exercise can temporarily elevate the white blood cell count. Don't worry; we'll evaluate all factors to make sure we get you the care you need. Remember, your health journey is unique, and we're here to support you every step of the way."
```

Chatbot Interface

Vector Database **Chatbot**

WBC	LYMp	MIDp	NEUTp	LYMn	MIDn	NEUTn	RBC	HGB
2	15	3.2						

Save and begin Chat



Based on the provided blood test results, the patient's white blood cell (WBC) count is significantly low ($2.0 \times 10^9/L$) compared to the normal range of 4.0 to $10.0 \times 10^9/L$. This condition is known as leukopenia. The lymphocyte percentage (LYMp) is also low at 15%, falling below the normal range of 20.0% to 40.0%. This indicates lymphopenia. The MIDp (percentage of other white blood cells) is slightly elevated at 3.2%, exceeding the lower limit of the normal range (1.0% to 15.0%).

The low WBC count and lymphocyte percentage suggest a weakened immune system, potentially increasing susceptibility to infections. The slightly elevated MIDp percentage may indicate a compensatory response or involvement of other white blood cell types. The information provided does not include neutrophil counts, which would provide additional insight into the nature of the immune response.

Further investigation is necessary to determine the underlying cause of the low WBC and lymphocyte counts. Possible causes mentioned in the text include bone marrow damage (potentially from infection, disease, or treatments such as chemotherapy), autoimmune disorders, HIV, and cancers affecting the bone marrow. Additional tests, such as a complete blood count with differential, blood smear, and/or bone marrow test, are likely needed to reach a definitive diagnosis. The patient should consult their healthcare provider to discuss these results and determine the next steps.


Ask me questions related to blood test


Chatbot Interface

Vector Database **Chatbot**

WBC	LYMp	MIDp	NEUTp	LYMn	MIDn	NEUTn	RBC	HGB	
2	15	1							

Save and begin Chat

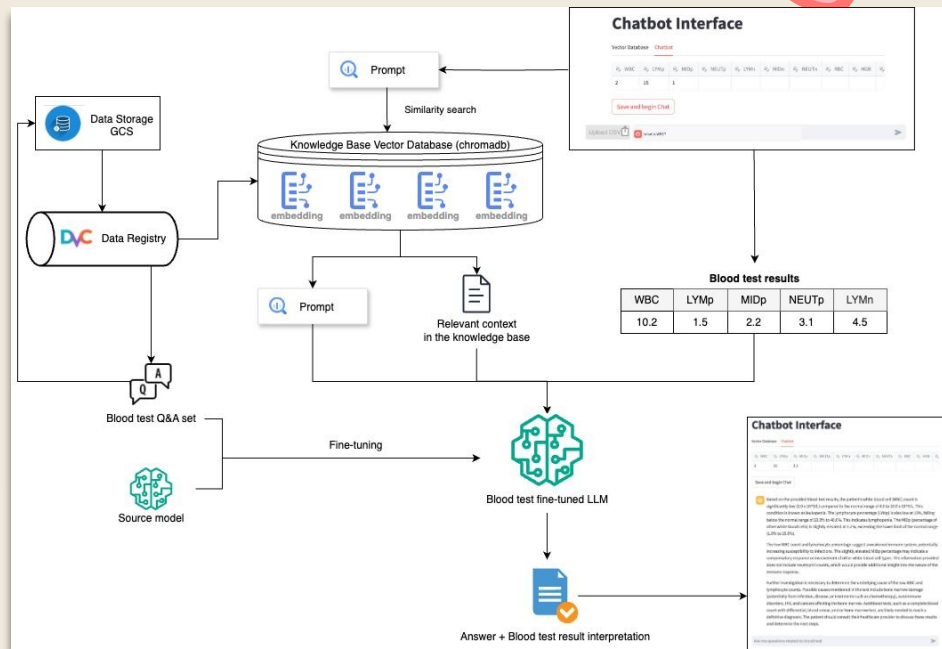
Upload CSV 

 what is WBC?

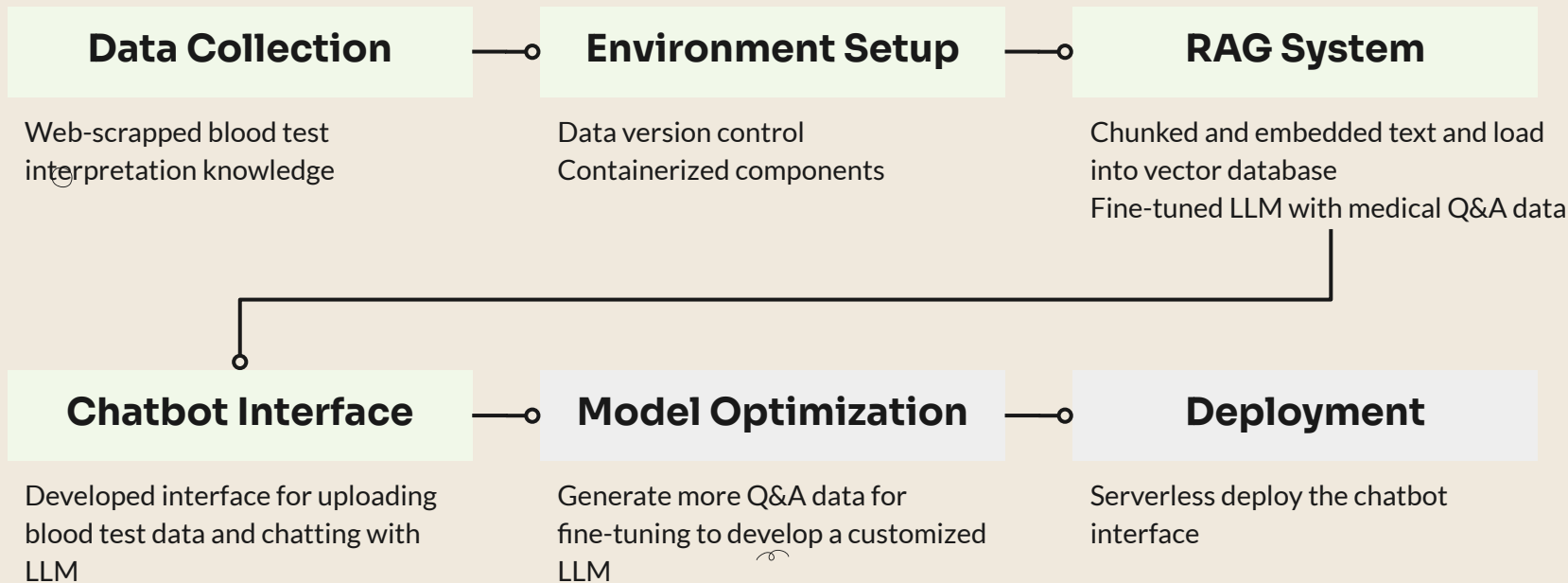


SCALABILITY AND EFFICIENCY

- Infrastructure Considerations:
 - **Docker**: reproducibility and consistent deployment
 - **GCP**: reliable cloud infrastructure (and FREE cloud credit!)
- Performance Optimization:
 - Optimizes RAG model with similarity search
 - Domain-specific LLM fine-tuning for more accurate medical interpretation
- Technical Scalability:
 - **ChromaDB**: vector database system for more efficient knowledge retrieval



FUTURE GROWTH AND DEVELOPMENT



MARKET GROWTH



Adaptation for Physicians and Institutions

Institutions can introduce Bloodwise to patients after blood tests to facilitate interpretations



Integration with Existing Healthcare Platforms

Bloodwise will be more accessible to patients if it's in their healthcare platform