

**Dr. Vinay Chopra**  
 MD (Pathology & Microbiology)  
 Chairman & Consultant Pathologist

**Dr. Yugam Chopra**  
 MD (Pathology)  
 CEO & Consultant Pathologist

<b>NAME</b>	: Mrs. ANJU	<b>PATIENT ID</b>	: 1774882
<b>AGE/ GENDER</b>	: 35 YRS/FEMALE	<b>REG. NO./LAB NO.</b>	: 042503010001
<b>COLLECTED BY</b>	:	<b>REGISTRATION DATE</b>	: 01/Mar/2025 03:42 PM
<b>REFERRED BY</b>	:	<b>COLLECTION DATE</b>	: 01/Mar/2025 04:19PM
<b>BARCODE NO.</b>	: A1260595	<b>REPORTING DATE</b>	: 01/Mar/2025 05:01PM
<b>CLIENT CODE.</b>	: KOS DIAGNOSTIC SHAHBAD		
<b>CLIENT ADDRESS</b>	: 6349/1, NICHOLSON ROAD, AMBALA CANTT		

Test Name	Value	Unit	Biological Reference interval
-----------	-------	------	-------------------------------

### HAEMATOLOGY

#### GLYCOSYLATED HAEMOGLOBIN (HbA1c)

GLYCOSYLATED HAEMOGLOBIN (HbA1c): WHOLE BLOOD <i>by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)</i>	5	%	4.0 - 6.4
ESTIMATED AVERAGE PLASMA GLUCOSE <i>by HPLC (HIGH PERFORMANCE LIQUID CHROMATOGRAPHY)</i>	96.8	mg/dL	60.00 - 140.00

#### INTERPRETATION:

AS PER AMERICAN DIABETES ASSOCIATION (ADA):	
REFERENCE GROUP	GLYCOSYLATED HEMOGLOBIN (HbA1c) in %
Non diabetic Adults $\geq 18$ years	$< 5.7$
At Risk (Prediabetes)	$5.7 - 6.4$
Diagnosing Diabetes	$\geq 6.5$
Therapeutic goals for glycemic control	<b>Age <math>&gt; 19</math> Years</b>
	Goals of Therapy: $< 7.0$
	Actions Suggested: $> 8.0$
	<b>Age <math>&lt; 19</math> Years</b>
	Goal of therapy: $< 7.5$

#### COMMENTS:

- Glycosylated hemoglobin (HbA1c) test is three monthly monitoring done to assess compliance with therapeutic regimen in diabetic patients.
- Since Hb1c reflects long term fluctuations in blood glucose concentration, a diabetic patient who has recently under good control may still have high concentration of HbA1c. Converse is true for a diabetic previously under good control but now poorly controlled.
- Target goals of  $< 7.0\%$  may be beneficial in patients with short duration of diabetes, long life expectancy and no significant cardiovascular disease. In patients with significant complications of diabetes, limited life expectancy or extensive co-morbid conditions, targeting a goal of  $< 7.0\%$  may not be appropriate.
- High HbA1c ( $> 9.0 - 9.5\%$ ) is strongly associated with risk of development and rapid progression of microvascular and nerve complications.
- Any condition that shortens RBC life span like acute blood loss, hemolytic anemia falsely lowers HbA1c results.
- HbA1c results from patients with HbSS, HbSC and HbD must be interpreted with caution, given the pathological processes including anemia, increased red cell turnover, and transfusion requirement that adversely impact HbA1c as a marker of long-term glycemic control.
- Specimens from patients with polycythemia or post-splenectomy may exhibit increase in HbA1c values due to a somewhat longer life span of the red cells.





**DR. VINAY CHOPRA**  
 CONSULTANT PATHOLOGIST  
 MBBS, MD (PATHOLOGY & MICROBIOLOGY)



**DR. YUGAM CHOPRA**  
 CONSULTANT PATHOLOGIST  
 MBBS, MD (PATHOLOGY)



**Dr. Vinay Chopra**  
 MD (Pathology & Microbiology)  
 Chairman & Consultant Pathologist

**Dr. Yugam Chopra**  
 MD (Pathology)  
 CEO & Consultant Pathologist

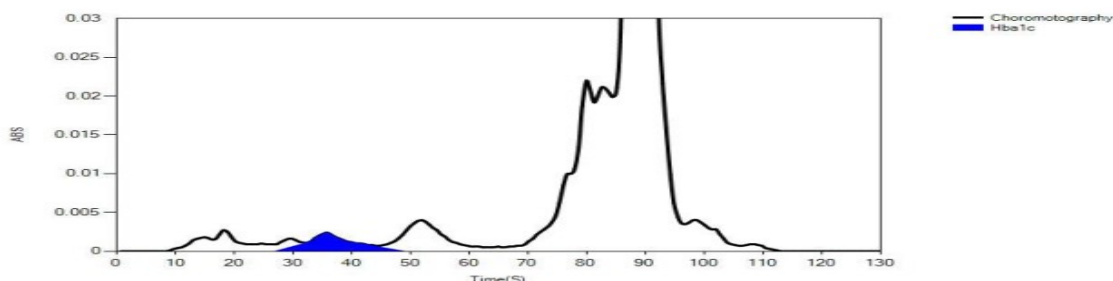
<b>NAME</b>	: Mrs. ANJU	<b>PATIENT ID</b>	: 1774882
<b>AGE/ GENDER</b>	: 35 YRS/FEMALE	<b>REG. NO./LAB NO.</b>	: 042503010001
<b>COLLECTED BY</b>	:	<b>REGISTRATION DATE</b>	: 01/Mar/2025 03:42 PM
<b>REFERRED BY</b>	:	<b>COLLECTION DATE</b>	: 01/Mar/2025 04:19PM
<b>BARCODE NO.</b>	: A1260595	<b>REPORTING DATE</b>	: 01/Mar/2025 05:01PM
<b>CLIENT CODE.</b>	: KOS DIAGNOSTIC SHAHBAD		
<b>CLIENT ADDRESS</b>	: 6349/1, NICHOLSON ROAD, AMBALA CANTT		

Test Name	Value	Unit	Biological Reference interval
-----------	-------	------	-------------------------------

LIFOTRONIC Graph Report

Name :	Case :	Patient Type :	Test Date : 01/03/2025 16:56:51
Age :	Department :	Sample Type : Whole Blood EDTA	Sample Id : A1260595
Gender :			Total Area : 8287

Peak Name	Retention Time(s)	Absorbance	Area	Result (Area %)
HbA0	66	2387	7455	85.5
HbA1c	38	40	438	5.0
La1c	26	24	181	2.1
HbF	21	16	23	0.3
Hba1b	13	27	108	1.2
Hba1a	10	18	82	0.9





**DR.VINAY CHOPRA**  
 CONSULTANT PATHOLOGIST  
 MBBS, MD (PATHOLOGY & MICROBIOLOGY)



**DR.YUGAM CHOPRA**  
 CONSULTANT PATHOLOGIST  
 MBBS, MD (PATHOLOGY)



**Dr. Vinay Chopra**  
 MD (Pathology & Microbiology)  
 Chairman & Consultant Pathologist

**Dr. Yugam Chopra**  
 MD (Pathology)  
 CEO & Consultant Pathologist

<b>NAME</b>	: Mrs. ANJU	<b>PATIENT ID</b>	: 1774882
<b>AGE/ GENDER</b>	: 35 YRS/FEMALE	<b>REG. NO./LAB NO.</b>	: 042503010001
<b>COLLECTED BY</b>	:	<b>REGISTRATION DATE</b>	: 01/Mar/2025 03:42 PM
<b>REFERRED BY</b>	:	<b>COLLECTION DATE</b>	: 01/Mar/2025 04:19PM
<b>BARCODE NO.</b>	: A1260594	<b>REPORTING DATE</b>	: 01/Mar/2025 06:41PM
<b>CLIENT CODE.</b>	: KOS DIAGNOSTIC SHAHBAD		
<b>CLIENT ADDRESS</b>	: 6349/1, NICHOLSON ROAD, AMBALA CANTT		

Test Name	Value	Unit	Biological Reference interval
-----------	-------	------	-------------------------------

## ENDOCRINOLOGY

### THYROID STIMULATING HORMONE (TSH)

THYROID STIMULATING HORMONE (TSH): SERUM 1.941  $\mu$ IU/mL 0.35 - 5.50

by CMIA (CHEMILUMINESCENT MICROPARTICLE IMMUNOASSAY)

3rd GENERATION, ULTRASENSITIVE

#### INTERPRETATION:

AGE	REFERENCE RANGE ( $\mu$ IU/mL)
0 – 5 DAYS	0.70 – 15.20
6 Days – 2 Months	0.70 – 11.00
3 – 11 Months	0.70 – 8.40
1 – 5 Years	0.70 – 7.00
6 – 10 Years	0.60 – 5.50
11 - 15	0.50 – 5.50
> 20 Years (Adults)	0.27 – 5.50
<b>PREGNANCY</b>	
1st Trimester	0.10 - 3.00
2nd Trimester	0.20 - 3.00
3rd Trimester	0.30 - 4.10

**NOTE:- TSH levels are subjected to circadian variation, reaching peak levels between 2-4 a.m and at a minimum between 6-10 pm. The variation is of the order of 50 %. Hence time of the day has influence on the measured serum TSH concentration.**

**USE:-** TSH controls biosynthesis and release of thyroid hormones T4 & T3. It is a sensitive measure of thyroid function, especially useful in early or subclinical hypothyroidism, before the patient develops any clinical findings or goitre or any other thyroid function abnormality.


#### INCREASED LEVELS:


- 1.Primary or untreated hypothyroidism, may vary from 3 times to more than 100 times normal depending on degree of hypofunction.
- 2.Hypothyroid patients receiving insufficient thyroid replacement therapy.
- 3.Hashimotos thyroiditis.
- 4.DRUGS: Amphetamines, Iodine containing agents and dopamine antagonist.
- 5.Neonatal period, increase in 1st 2-3 days of life due to post-natal surge.

#### DECREASED LEVELS:

- 1.Toxic multi-nodular goitre & Thyroiditis.
- 2.Over replacement of thyroid hormone in treatment of hypothyroidism.
- 3.Autonomously functioning Thyroid adenoma
- 4.Secondary pituitary or hypothalamic hypothyroidism
- 5.Acute psychiatric illness
- 6.Severe dehydration.
- 7.DRUGS: Glucocorticoids, Dopamine, Levodopa, T4 replacement therapy, Anti-thyroid drugs for thyrotoxicosis.



  
**DR.VINAY CHOPRA**  
 CONSULTANT PATHOLOGIST  
 MBBS, MD (PATHOLOGY & MICROBIOLOGY)

  
**DR.YUGAM CHOPRA**  
 CONSULTANT PATHOLOGIST  
 MBBS, MD (PATHOLOGY)



**Dr. Vinay Chopra**  
 MD (Pathology & Microbiology)  
 Chairman & Consultant Pathologist

**Dr. Yugam Chopra**  
 MD (Pathology)  
 CEO & Consultant Pathologist

<b>NAME</b>	: Mrs. ANJU	<b>PATIENT ID</b>	: 1774882
<b>AGE/ GENDER</b>	: 35 YRS/FEMALE	<b>REG. NO./LAB NO.</b>	: 042503010001
<b>COLLECTED BY</b>	:	<b>REGISTRATION DATE</b>	: 01/Mar/2025 03:42 PM
<b>REFERRED BY</b>	:	<b>COLLECTION DATE</b>	: 01/Mar/2025 04:19PM
<b>BARCODE NO.</b>	: A1260594	<b>REPORTING DATE</b>	: 01/Mar/2025 06:41PM
<b>CLIENT CODE.</b>	: KOS DIAGNOSTIC SHAHBAD		
<b>CLIENT ADDRESS</b>	: 6349/1, NICHOLSON ROAD, AMBALA CANTT		

Test Name	Value	Unit	Biological Reference interval
-----------	-------	------	-------------------------------


8.Pregnancy: 1st and 2nd Trimester

**LIMITATIONS:**

- 1.TSH may be normal in central hypothyroidism, recent rapid correction of hyperthyroidism or hypothyroidism, pregnancy, phenytoin therapy.
- 2.Autoimmune disorders may produce spurious results.



  
**DR.VINAY CHOPRA**  
 CONSULTANT PATHOLOGIST  
 MBBS, MD (PATHOLOGY & MICROBIOLOGY)

  
**DR.YUGAM CHOPRA**  
 CONSULTANT PATHOLOGIST  
 MBBS, MD (PATHOLOGY)





**Dr. Vinay Chopra**  
 MD (Pathology & Microbiology)  
 Chairman & Consultant Pathologist

**Dr. Yugam Chopra**  
 MD (Pathology)  
 CEO & Consultant Pathologist

<b>NAME</b>	: Mrs. ANJU	<b>PATIENT ID</b>	: 1774882
<b>AGE/ GENDER</b>	: 35 YRS/FEMALE	<b>REG. NO./LAB NO.</b>	: 042503010001
<b>COLLECTED BY</b>	:	<b>REGISTRATION DATE</b>	: 01/Mar/2025 03:42 PM
<b>REFERRED BY</b>	:	<b>COLLECTION DATE</b>	: 01/Mar/2025 04:19PM
<b>BARCODE NO.</b>	: A1260594	<b>REPORTING DATE</b>	: 01/Mar/2025 06:41PM
<b>CLIENT CODE.</b>	: KOS DIAGNOSTIC SHAHBAD		
<b>CLIENT ADDRESS</b>	: 6349/1, NICHOLSON ROAD, AMBALA CANTT		

Test Name	Value	Unit	Biological Reference interval
-----------	-------	------	-------------------------------

### PROLACTIN

PROLACTIN: SERUM	9	ng/mL	3 - 25
------------------	---	-------	--------

by CMIA (CHEMILUMINESCENT MICROPARTICLE IMMUNOASSAY)

#### INTERPRETATION:

1. Prolactin is secreted by the anterior pituitary gland and controlled by the hypothalamus.  
 2. The major chemical controlling prolactin secretion is dopamine, which inhibits prolactin secretion from the pituitary.  
 3. Physiological function of prolactin is the stimulation of milk production. In normal individuals, the prolactin level rises in response to physiologic stimuli such as sleep, exercise, nipple stimulation, sexual intercourse, hypoglycemia, postpartum period, and also is elevated in the newborn infant.

#### INCREASED (HYPERPROLACTEMIA):

1. Prolactin-secreting pituitary adenoma (prolactinoma, which is 5 times more frequent in females than males).  
 2. Functional and organic disease of the hypothalamus.  
 3. Primary hypothyroidism.  
 4. Section compression of the pituitary stalk.  
 5. Chest wall lesions and renal failure.  
 6. Ectopic tumors.  
 7. DRUGS:- Anti-Dopaminergic drugs like antipsychotic drugs, anti-nausea/antiemetic drugs, Drugs that affect CNS serotonin metabolism, serotonin receptors, or serotonin reuptake (anti-depressants of all classes, ergot derivatives, some illegal drugs such as cannabis), Antihypertensive drugs, Opiates, High doses of estrogen or progesterone, anticonvulsants (valproic acid), anti-tuberculous medications (Isoniazid).

#### SIGNIFICANCE:

1. In loss of libido, galactorrhea, oligomenorrhea or amenorrhea, and infertility in premenopausal females.  
 2. Loss of libido, impotence, infertility, and hypogonadism in males. Postmenopausal and premenopausal women, as well as men, can also suffer from decreased muscle mass and osteoporosis.  
 3. In males, prolactin levels >13 ng/mL are indicative of hyperprolactinemia.  
 4. In women, prolactin levels >27 ng/mL in the absence of pregnancy and postpartum lactation are indicative of hyperprolactinemia.  
 5. Clear symptoms and signs of hyperprolactinemia are often absent in patients with serum prolactin levels <100 ng/mL.  
 4. Mild to moderately increased levels of serum prolactin are not a reliable guide for determining whether a prolactin-producing pituitary adenoma is present, 5. Whereas levels >250 ng/mL are usually associated with a prolactin-secreting tumor.

#### CAUTION:

Prolactin values that exceed the reference values may be due to macroprolactin (prolactin bound to immunoglobulin). Macroprolactin should be evaluated if signs and symptoms of hyperprolactinemia are absent, or pituitary imaging studies are not informative.

\*\*\* End Of Report \*\*\*



  
 DR. VINAY CHOPRA

CONSULTANT PATHOLOGIST  
 MBBS, MD (PATHOLOGY & MICROBIOLOGY)

  
 DR. YUGAM CHOPRA

CONSULTANT PATHOLOGIST  
 MBBS, MD (PATHOLOGY)

