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**Parzeh Pathobiology Laboratory - آزمایشگاه پاتوبیولوژی و ژنتیک پارزک**

پارزک تر از فنکته دوم صادقیه - ابتدای خیابان چناج - نبش عابدزاده - ساختمان پارسه  
 موبقات اول تا چهارم تلفکس : ۴۴۲۸۷۴۲۲-۵



نام بیمار : آقای امین گودرزی  
 سن بیمار : ۲۷ سال  
 شماره : ۴۶۸۹۸

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 بیمه : تامین اجتماعی  
 پزشک : سرکار خانم دکتر معصومه سلیمی

سابقه : ۲ صفحه : ۱ از ۹



**Blood Biochemistry**

Test	Flag	Result	Unit	Method	Reference Interval
Fasting Blood Sugar		96	mg/dL	GOD-PAP	70 - 100 pregnant women <92

Provisional DM: >126(2 times).

Drugs may increase glucose:  
 Hormones (oral contraceptives, thyroid hormone, glucocorticoids, progestins).  
 Anti-inflammatory agents (Indomethacin).  
 Diuretic and antihypertensive drugs (Thiazides, furosemide, clonidine).  
 Neuroactive drugs (phenothiazines, tricyclics, lithium, carbonate, haloperidol, adrenergic agonists).  
 others (isoniazid, heparin, cimetidine, nicotinic acid).

Blood Urea Nitrogen	Result	Unit	Method	Reference Interval
	13.8	mg/dL	Urease	Child ( 1 - 14 yrs ) : 5.1 - 16.8 Men ( 15 - 150 yrs ) : 8.4 - 21 Women ( 15 - 150 yrs ) : 7.0 - 20

Drugs may increase BUN: Alkaline Antiacids, Gentamycin, Antimoan Salts, Cephaloridine, Furosemide, Kanamycin, L-DOPA, Neomycin.  
 Used to evaluate kidney function.  
 Serum BUN increase in low renal perfusion, acute or chronic intrinsic renal disease, post-renal obstruction to urine flow and high protein diet.  
 Decreased levels are associated with low protein diet, acromegaly, pregnancy, starvation hepatocellular failure and severe liver damage.

Creatinine	Result	Unit	Method	Reference Interval
	1.05	mg/dL	Jaffe	0.4 - 1.3

Drugs may increase Serum Cr.: Acetohexamide, Cimetidine, Cephalosporins, Trimetoprim, Amphotricin B, Kanamycin. methodologic interference (ascorbic acid, PSP, para-aminohippurate, levodopa).

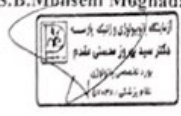
Uric Acid (serum)	Result	Unit	Method	Reference Interval
	5.6	mg/dL	URicase	----- Boy 0 - 5 days: 1.9 - 7.9 1 - 4 yrs : 2.2 - 5.7 5 - 11 yrs : 3.0 - 6.4 12 - 14 yrs : 3.2 - 7.4 15 - 17 yrs : 4.5 - 8.1 Men : 3.6 - 8.2 Women : 2.3 - 6.1 ----- Girl 1.9 - 7.9 1.7 - 5.1 3.0 - 6.0 3.2 - 6.1 3.2 - 6.4

Drugs may increase Serum U.A. :  
 Cytotoxic Drugs (methotrexate, busulfan, vincristine, azathioprine, prednisone).  
 Various Diuretics (thiazides, furosemide, mercurials).  
 Nephrotoxic Drugs (mitomycin C).  
 others (levodopa, phenytoin sodium).

Drugs may decrease Serum U.A. :  
 Allopurinol [xanthin oxidase inhibition].  
 Probenecid, high dose salicylates, cinchophen, corticotropin, coumarins, thiazide diuretics, acetohexamide [due to uricosuric effect].  
 others (corticosteroids, indomethacin).

Triglycerides (Tg)	Result	Unit	Method	Reference Interval
	53	mg/dL	GPO-PAP	ATP III Classification: " " " < 150 = NORMAL " " " 150 - 199 = Borderline High " " " 200 - 499 = High " " " >= 500 = Very High

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Drugs may increase Tg.: Esterogens, OCP, Cholestyramine, Glyceraldehide.

**Cholesterol-Total** 140 mg/dL CHOD-PAP  
 ATP III Classification:  
 " " " < 200 = DESIRABLE  
 " " " 200- 239 = Borderline High  
 " " " >= 240 = High

Drugs may increase Cholesterol:  
 1- Hepatotoxic: (e.g. Phenytoin sodium)  
 2- Cholestatic  
 3- Hormonal : (Corticosteroide, OCP)

**HDL-Cholesterol (Direct)** 62 mg/dL Direct  
 ATP III Classification:  
 Men : No Risk > 55  
 Men : Moderate Risk 35 - 55  
 Men : High Risk < 35  
 Women : No Risk > 65  
 Women : Moderate Risk 45 - 65  
 Women : High Risk < 45

**LDL-Cholesterol (Direct)** 70 mg/dL Direct  
 ATP III Classification:  
 " " " < 100 = OPTIMAL  
 " " " 100 - 129 = Near Optimal  
 " " " 130 - 159 = Borderline High  
 " " " 160 - 189 = High  
 " " " >= 190 = Very High

**Atherogenic Index (LDL/HDL-C)** 1.13 Ratio  
 < 2.0 = Low Risk  
 2.0 - 3.0 = Weak Risk  
 3.0 - 5.0 = Moderate Risk  
 > 5.0 = High Risk

**Risk Factor (T.C/HDL-C)** 2.3 Ratio  
 3.3 - 4.4 = Low Risk  
 4.5 - 7.1 = Weak Risk  
 7.2 - 11.0 = Moderate Risk  
 > 11.0 = High Risk

**SGOT (AST)** 20 U/L DGKC  
 Men : Up to 37  
 Women : Up to 31  
 child: up to 60

AST originates in the heart, liver, skeletal muscle, kidney, pancreas spleen and lung. High serum levels occur in chronic alcoholic ingestion, Reye syndrome, myocardial infarction, hepatitis, lung diseases, malignancies and muscular disorders. In MI AST rises 6-8 hrs after the onset of chest pain, peaks at about 18-24 hrs and returns to normal in 3-5 days. Drugs may inc. AST & ALT: Ampicilin, Cephalothin, Clofibrate, Colchicine, Gentamycin, Steroids, Erythromycin, ethyltestosterone, Naficilin, Oplates, Oxacilin. Low levels of AST results from Uremia, Vit B6 deficiency, metronidazole & trifluoperazine.

**SGPT (ALT)** 13 U/L DGKC  
 Men : Up to 41  
 Women : Up to 31

This is the main enzyme in liver function test. It is present in liver paranchyma and is thus elevated in hepatocellular damage primarily from toxic necrosis, viral hepatitis & circulatory failure. Moderate increase occurs in cirrhosis, preeclampsia, fatty liver, chronic alcoholic abuse, filariasis, severe burns, severe pancreatitis, infectious mononucleosis & preceding trauma. Decreased in pyrodoxal phosphate deficiency.

Drugs may increase AST & ALT with chemical interference: Ascorbic Acid, Erythromycin, Isoniazid, L-DOPA, para-ASA.

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**Alkaline Phosphatase** 195 U/L DGKC Men : 80 - 306  
 Women: 64 - 306  
 Children (< 15 years) : 180 - 1200

Increased during bone metabolism: puberty, healing of a fracture, primary & secondary hyperparathyroidism osteomalacia & juvenile rickets.  
 Also increased primarily in liver & bone disease & metastatic carcinoma in bone. It is also released from the intestine & placenta.  
 Hepatotoxic drugs may positively influence the result  
 Decreased in hypothyroidism, scurvy, gross anemia, kwashiorkor, achondroplasia, cretinism, deposition of radioactive materials in bone, B 12 deficiency (pernicious anemia) and multinutritional deficiency of zinc or magnesium.

**Calcium (Ca++)** 9.9 mg/dL Arsenazo adult : 8.2 - 10.6  
 1 Month - 1 y : 8.6 - 11.2  
 2 - 12 y : 8.8 - 10.8

Drugs may increase Ca.: Therapeutic agents (estrogens, androgens, progestins, tamoxifen, lithium). diuretics (Thiazide and chlorthalidone, rarely). vitamin D intoxication. Milk-alkali syndrome. Aluminum-associated osteomalacia.  
 Drugs may decrease Ca.: Chronic use of anticonvulsant drugs (Phenobarbital & Phenytoin), Acetazolamide & Corticosteroides.  
 Increased in hyperparathyroidism, myelomatosis, some malignancies both of bone & non-osteous as well as in Vit. D excess & sarcoidosis.  
 Decreased in idiopathic, surgical, or congenital hypoparathyroidism hypoalbuminuria & in renal disease. Also decreased in Vit. D deficiency, Mg deficiency, massive blood transfusion, leprosy, cystinosis, osteomalacia &...

**Phosphorus (P)** 3.5 mg/dL Endpoint Adult : 2.6 - 4.50  
 Child:  
 (1-6yrs) : 3.1 - 5.8  
 (7-12yrs) : 3.1 - 5.7  
 (13-18yrs) : 2.7 - 5.1  
 Neonates:  
 1 - 30 day: 3.9 - 7.7  
 1 - 12 month: 3.5 - 6.6

Drugs may increase P.:  
 Phosphate enemas or infusions, Massive blood transfusions, Excess Vitamin D.

Drugs may decrease P.:  
 Hyperalimentation, Nutritional recovery syndrome, Administration of IV glucose (e.g., recovery after sever burns, hyperalimentation). Administration of anabolic steroids, androgens, epinephrine, glucagon, insulin. Administration of diuretics. Administration of phosphate-binding antacids. Salicylate poisoning.

**Iron (Fe++) Serum** 105 µg/dL Ferene Men : 40 - 168  
 Women : 37 - 155  
 Neonate : 30 - 155  
 Infants : 35 - 155  
 Children : 40 - 200

**Total Iron Binding Capacity** 321 µg/dL Endpoint 230 - 440

**Sodium : (Na+)** 136 m.Eq/L ISE 135 - 150

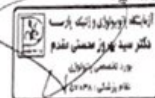
Drugs may increase S. Na.: Corticosteroides, Mannitol Guanithidine, Phenylbutazone, L-DOPA, Bicarbonates, Clonidine, Tetracyclin  
**Potassium : (K+)** 4.0 m.Eq/L ISE 3.8 - 5

Drugs may decrease K: Diuretics, Corticost., IV EDTA, Chronic Laxative abuse, Aldost., Bicarbon., Glucose, Insulin, Tetracyc. Salicylate

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**Blood Biochemistry** Continue ..

Magnesium (Mg++)

2.0 mg/dL Automated

Men: 1.8 - 2.6  
 Women: 1.9 - 2.5  
 Children: 1.6 - 2.3  
 Newborns : 1.4 - 2.2

**Trace Element (1)**

Test

Zinc (Zn.)

Flag

Result

77

Unit

µg/dL

Method

Potentiometri

Reference Interval

Men : 72.6 - 127  
 Women : 70 - 114  
 Children: 65 - 110  
 Neonates: 50 - 100

The clinical consequences of dietary zinc deficiency vary with the degree of deficiency. Mild & moderate forms of deficiency are associated with oligospermia, weight loss, hyperammonemia, childhood growth retardation, hypogonadism, dermatitis, poor appetite, delayed wound healing, malabsorption, lethargy and impaired immune responsiveness. In patients with severe deficiency, dermatitis, alopecia, weight loss, diarrhea, neuropsychiatric disorders, recurrent infection, and death may result. Anabolic steroids & metal-chelating agents interfere with zinc metabolism.

**Serology**

Test

CRP

Flag

Result

< 0.6

Unit

mg/dL

Method

Agglutination

Reference Interval

Negative = Less than 0.6

CRP is an acute phase reactant, which can be used as a test for inflammatory diseases, infections, and neoplastic diseases. Progressive increases correlate with increases of inflammation/injury. CRP is a more sensitive rapidly responding indicator than ESR. CRP may be used to detect early postoperative wound infection and to follow therapeutic response to an anti-inflammatory agent. Cutoff values for the top quantile are typically 0.25 mg/dL, however in postmenopausal women on hormone replacement therapy the cutoff is about 0.6 mg/dL.

**ECL**

Test

Tri Iodo Thyronine :T3 (ECL)

Flag

Result

1.7

Unit

nmol/L

Method

CL

Reference Interval

Euthyroid Adults: 0.9 - 2.5  
 Children:  
 " < 3 days : 1.48 - 4.48  
 " 4 - 30 days : 0.95 - 3.74  
 " 2 - 24 month : 1.25 - 4.31  
 " 2 - 6 yr : 1.27 - 3.87  
 " 7 - 11yr : 1.42 - 3.37  
 12 - 19 yr : 1.0 - 3.0

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Measurement of total T3 is often employed to help confirm a diagnosis of hyperthyroidism where an elevated free or total T4 has been encountered. For the most part, free T3 levels correlate closely with Total T3 levels. Total T3 however is a function of not only thyroid status and the preferal conversion of T4 to T3, but also of the concentration thyroid hormone-binding proteins. High levels of T3 are found in hyperthyroidism, pregnancy, early thyroid failure, iodine deficiency goiter & sates with increased TBG. Low levels in primary or secondary hypothyroidism and states with decreased TBG. T3 may be elevated in presence of a normal T4 in T3-toxicosis.

<b>Total Thyroxin :T4 (ECL)</b>	<b>85.7</b>	nmol/L	ECL	Adults Euthyroid : 66 - 181
				Children:
				" < 3days: 69.1 - 289
				" 4 - 30days: 67.4 - 299
				" 2 - 12 months: 69.1 - 206
				" 2 - 6 yr : 67.7- 190
				" 7 - 12 yr : 73.4 - 182
				12 - 19 yr : 61 - 188

Drugs may increase T-4:  
 By increasing TBG (Clofibrate, Heroin, Methadone, Perphenazine, Phenothiazines, Progestins; estrogens, Fluorouracil).  
 By altering T-4 peripheral conversion (Amiodarone, L-Thyroxine, Radiopaque agents [Iopanoic acid, Iodate], Propranolol).  
 By stimulating TSH secretion (Amphetamines).  
 By assay cross reaction (Dextrothyroxine).

Drugs may decrease T-4:  
 By decreasing TBG (Anabolic steroids; androgens, Aspirin [high doses], Chlorpropamide, Coticotropin, Sulfonamides, Asparaginase).  
 By decreasing T-4 synthesis (Aminosalicylic acid, Dopamine, Iodides, Liothyronine, Lithium, Methimazole, Propylthiouracil, Sulfonamides, Sulfonyleureas).  
 By displacing T-4 from binding site (Aspirin, Halofenate, Heparin, Phenylbutazone, Phenytoin, Tolbutamide).  
 By increasing T-4 metabolism (Chlorpromazine, Phenytoin, Reserpine).

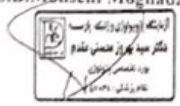
<b>TSH (ECL)</b>	<b>H 8.307</b>	uIU/ml	ECL	Euthyroid Adults : 0.27 - 5.2
				Children:
				" <3 days : 5.17 - 14.6
				" 3 - 30 days : 0.43 - 16.1
				" 2 - 12 month : 0.62 - 8.05
				" 2 - 6 yrs : 0.54 - 5.8
				" 7 - 11 yrs : 0.66 - 5.2
				12 - 19 yrs : 0.53 - 5.2

Drugs may increase TSH:  
 Aminoglutethimide, Amphetamine abuse, Ethionamide, Inorganic iodides, 6-Mercaptopurine, Phenylbutazone, Nitroprusside, Resorcinol, Sulfonamides, Sulfonyleureas, Domperidone and metoclopramide, Lithium.

Drugs may decrease TSH:  
 Dopamine (prolonged use can cause secondary hypothyroidism with low/normal TSH), L-Dopa, Glucocorticoids, Phenytoin, Thyroid hormones.

<b>F.S.H (ECL)</b>	<b>3.0</b>	mIU/mL	CLIA	Men : 0.9 - 7
				Women :
				" Follicular phase : 2 - 7.1
				" Ovulation period : 2.7 - 12.3
				" Luteal phase : 1 - 4.4
				" Post menopausal : 14.4 - 75.5

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FSH is a gonadotropin secreted by the pituitary gland. Very high levels are found after puberty in primary gonadal failure, menopause, Klinefelter's syndrome and hypogonadism (in both sexes). Decreased in primary pituitary dysfunction. Useful, with LH in investigating infertility and amenorrhea in women, and testicular dysfunction in men.

<b>L.H (ECL)</b>	<b>4.6</b>	mIU/mL	CLIA	Men : 1.4 - 7.7 Women : " Follicular phase : 1.9 - 11.6 " Ovulatory phase : 12.9 - 105.2 " Luteal phase : 0.8 - 10.5 " Post Menopause: 6.6 - 66.4
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LH, like FSH, is secreted by the anterior pituitary under the influence of gonadotropin releasing hormone from hypothalamus. Both hormones are therefore analyzed simultaneously. LH stimulates testosterone synthesis in the male and induces ovulation in the female. Increased levels of LH are associated with primary hypogonadism in males and with menopause, primary ovarian hypofunction, and polycystic ovarian disease in females. Also increased in precocious puberty. Decreased in failure of pituitary or hypothalamus. The test is useful in defining menstrual cycle phases and in distinguishing primary from secondary gonadal failure, menstrual disturbances and amenorrhea.

<b>Prolactin (ECL)</b>	<b>12.74</b>	ng/mL	CL	Men: " Adult : 3.0 - 16.5 " (13-18yr) : 5.0 - 25 Women: " Adult : 3.8 - 30.7 " Up to 12 yr : 0 - 10 " (13 - 18 yr) : 0 - 51 Post-Menopausal : 3.2 - 24.9 Pregnant Women: 20 - 400
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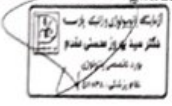
Drugs may increase serum Prolactin:  
 Estrogens and oral contraceptives, Neuroleptics (phenothiazines, thioxanthenes, butyrophenones), Antipsychotics (Compazine, Thorazine, Stelazine, Mellaril, Haldol), Opiates (morphine, methadone), Amphetamines, Reserpine, Alpha-methyl dopa, Thyrotropin-releasing hormone, Isoniazid, Dopamine antagonists (metoclopramide, sulpiride).  
 Drugs may decrease serum Prolactin:  
 Dopamine agonists and ergot derivatives (bromocriptine, gergotril mesylate, lisuride hydrogen maleate), Levodopa, apomorphine, clonidine.  
 Elevated in cases of pituitary tumors, diseases of hypothalamus, hypothyroidism & ectopic tumors.

<b>Testosterone (ECL)</b>	<b>10.10</b>	ng/mL	Elisa	Male : 2.5 - 10.0 Female : 0.2 - 0.95 Boys Before Puberty : 0.1 - 3.7
<b>Ferritin (ECL)</b>	<b>90.73</b>	ng/mL	CLIA	Male : 27 - 375 Female : 12 - 135 Post Menopausal Woman: 20- 200 Child : 10.9 - 350

Serum ferritin levels correlate directly with total body iron stores. Increased levels are associated with iron overload from any cause and in many malignant and inflammatory conditions.  
 Decreased levels are found in iron deficiency, anemia of chronic disease, and liver disease. Iron therapy may influence result.

<b>25 (OH) vit. D (D3)</b>	<b>41.1</b>	ng/mL	HPLC	<10 Deficiency 10 - 25 Insufficiency 25 - 80 Sufficiency >80 Toxicity Possible
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ECL Continue ..

ناظر قنی بخش:

25-OH Vit. D levels exhibit seasonal variation. The reference interval of 15 - 57 ng/mL represents summer & fall values. Winter value may be 40-50% lower due to reduced UV radiation exposure.

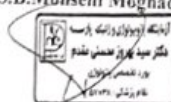
<b>Vitamin B12</b>	<b>370.45</b>	pg/mL	CLIA	Normal: 180 - 916
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Used to evaluated Vit B12 & folic acid deficiencies, alcoholism, prenatal care, malabsorption & neurological disorders.  
 Increased during B 12 therapy, myeloproliferative disorders, chronic renal failure, diabetes, leukocytosis, polycytemia vera, some cardiomas, and rarely in primary hepatic carcinoma.  
 Reduced in pernicious anemia, certain malnutrition and malabsorption states, megaloblastic anemia, congenital disorders and pregnancy.  
 Please protect serum samples from direct light.

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### Hematology

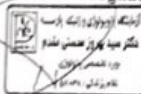
ناظر فنی بخش: دکتر فخرالدین صبا

Test	Flag	Result	Unit	Method	Reference Interval
<b>Complete Blood Count</b>					
W.B.C		5.16	1000/Cumm		Male: 4.5 - 10 Female: 4.5 - 10 Child: 4.5 - 15 Infants: 4 - 18 Neonates: 4.0 - 25
R.B.C		4.89	Mil/Cumm		Male: 4.7 - 6.1 Female: 4.2 - 5.4 Child: 4.0 - 5.30 Infants: 3.5 - 5.2 Neonates: 3.5 - 7.0
Hb.		14.9	g/dL		M: 14 - 18 F: 12 - 16 Child: 10.3 - 15.7 Infants: 9.5 - 16 Neonates: 17 - 20
Hct.		43.9	%		M: 42 - 54 F: 37 - 47 Child: 30 - 44 Infants: 29 - 49 Neonates: 38 - 68
M.C.V		89.8	fl.		M: 80 - 100 F: 80 - 100 Child: 80 - 100 Infants: 80 - 100 Neonates: 95 - 125
M.C.H		30.4	pg		M & F : 27 - 32
M.C.H.C		33.8	g/dL		M & F : 31 - 36
Platelet		193	1000/ $\mu$ L		M: 150 - 450 F: 140 - 440 Child: 150 - 550 Infants: 150 - 550 Neonates: 100 - 300
MPV		10.3	fl.		M & F : 7.4 - 10.4
RDW		12.5	%		M & F : 11.5 - 14.5
<b>Differential</b>					
Neutrophil		52.6	%		
Lymphocytes		36.2	%		

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 سن بیمار : ۲۷ سال  
 شماره : ۴۶۸۹۸

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 تاریخ جواب: ۱۳۹۷/۰۷/۰۸  
 بیمه : تامین اجتماعی  
 پزشک : سرکار خانم دکتر معصومه سلیمی

سابقه : ۲ صفحه : ۹ از ۹



**Hematology** Continue ..

Monocytes	7.0	%
Eosinophil	3.4	%
Basophil	0.8	%
ESR 1st hr	6	mm/hour Automated

ناظر فنی بخش: دکتر فخرالدین صبا

Below age 50 yrs: Men 15 Women 20  
 Above age 50 yrs: Men 20 Women 30  
 Above age 85 yrs: Men 30 Women 42

Drugs may increase ESR:  
 Dextran, Methylodopa, Methysergide, Penicillamine, Theophylline, Trifluoperidol, Vitamin A.

Drugs may decrease ESR:  
 Quinine (therapeutic), Salicylates (therapeutic), drugs that cause a high glucose level.

**Hb. Fraction**

Test	Flag	Result	Unit	Method
Glycated Hb. (Hb.A1c)		4.7	% total Hb	Automated
Mean Plasma Glucose		90	mg/dL	Calculation

ناظر فنی بخش: دکتر فخرالدین صبا

**Reference Interval**

Non Diabetic : 4.8 - 6.3  
 Non Diabetic or IGT : 5.6 - 6.3  
 Well Diabetic Control : 6.3 - 8.0  
 Fair Diabetic Control : 8.0 - 10.0  
 Poor Diabetic Control : Mor than 10.0

-----  
 Estimation based on Hb A1c

**Urinalysis**

Urinalysis  
 Urine

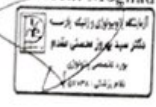
ناظر فنی بخش: دکتر نوشین شعبانی

Macroscopic		Microscopic	
Color	Yellow	W.B.C/hpf	0-1
Appearance	Clear	R.B.C/hpf	0-1
Specific Gravity	1.010	Epithelial Cell	1-2
pH	7.0	Bacteria/hpf	Not seen
Protein	Negative	Crystals/hpf	Not seen
Glucose in urine	Negative	Casts/lpf	Not seen
Blood/Hb	Negative	Mucus Threads/hpf	Few
Ketone	Negative	Yeast like cell	Not seen
Bilirubin	Negative		
Urobilinogen	Negative		
Nitrite	Negative		
Ascorbic Acid	Negative		

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# Parseh Pathobiology & Genetics Laboratory

No.21 Janah Ave, Sadeghiyeh Sq, Tehran, Iran Tel: (021) 44287632-5  
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Parseh Pathobiology Lab

Mindray Bc-5300 (Full Diff, Flowcytometry Laserlight Scattering, Chemical Dye)

First Name: امین  
Age: 27Year

Last Name: گودرزی  
Gender: Male

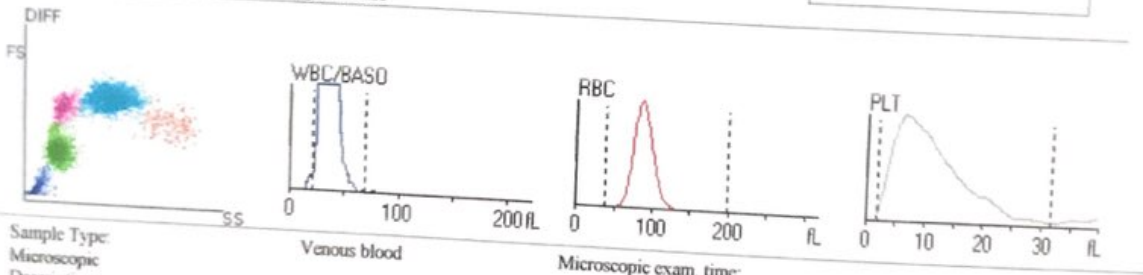
Run Time: 03-10-2018 10:05  
Sample ID: 3.99-46898

Parameter	Result	Unit	Ref. Range
<b>WBC</b>	<b>5.16</b>	<b>x10<sup>3</sup>/uL</b>	<b>4.50 - 10.00</b>
Neu%	L	52.6 %	55.5 - 75.0
Lym%	H	36.2 %	33.3 - 35.0
Mon%		7.0 %	3.0 - 12.0
Eos%		3.4 %	0.5 - 5.0
Bas%		0.8 %	0.0 - 1.0
Neu#		2.72 x10 <sup>3</sup> /uL	2.50 - 7.50
Lym#		1.87 x10 <sup>3</sup> /uL	1.50 - 3.50
Mon#		0.36 x10 <sup>3</sup> /uL	0.12 - 1.20
Eos#		0.17 x10 <sup>3</sup> /uL	0.02 - 0.50
Bas#		0.04 x10 <sup>3</sup> /uL	0.00 - 0.10
<b>RBC</b>	<b>4.89</b>	<b>x10<sup>6</sup>/uL</b>	<b>4.70 - 6.10</b>
<b>HGB</b>	<b>14.9</b>	<b>g/dL</b>	<b>14.0 - 18.0</b>
HCT		43.9 %	42.0 - 54.0
MCV		89.8 fL	80.0 - 100.0
MCH		30.4 pg	26.0 - 32.0
MCHC		33.8 g/dL	31.0 - 36.0
RDW-CV		12.5 %	11.5 - 14.5
RDW-SD		47.2 fL	40.0 - 53.0
<b>PLT</b>	<b>193</b>	<b>x10<sup>3</sup>/uL</b>	<b>150 - 450</b>
MPV		10.3 fL	6.5 - 12.0
PDW		16.6	9.0 - 17.0
PCT		0.198 %	0.108 - 0.282
* ALY%		1.1 %	0.0 - 6.0
* LIC%		0.0 %	0.0 - 2.5
* ALY#		0.06 x10 <sup>3</sup> /uL	0.00 - 0.60
* LIC#		0.00 x10 <sup>3</sup> /uL	0.00 - 0.20

WBC Flag

RBC Flag

PLT Flag



Sample Type: Venous blood  
Microscopic Description:  
Neutrophilic segmented...  
Monocyte:  
Plasmacyte:  
Promyelocyte:  
Basophilic myelocyte:  
Basophilic metamyelocyte:  
Reticulocyte:  
Other abn. cells:  
Blood Type

Neutrophilic band granulocyte:  
Eosinophil:  
Atypical Lymph:  
Neutrophilic myelocyte:  
Neutrophilic metamyelocyte:  
Prelymphocyte:  
NRBC:

Lymphocyte:  
Basophil:  
Blast:  
Eosinophilic myelocyte:  
Eosinophilic metamyelocyte:  
Premonocyte:  
Undefined cells:

ESR mm/h [0 ,20 ]


Lab Director



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 بیمه : آزاد  
 پزشک :

سابقه : ۲ صفحه : ۱ از ۴



**Blood Biochemistry**

<u>Test</u>	<u>Flag</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>	<u>Reference Interval</u>
<b>Total Bilirubin</b>		0.60	mg/dL	DCA	Adult: 0.2 - 1.3 Full Term Newborns: < 1 day: 2.0 - 6.0 1 - 2 days: 1.3 - 9.0 3 - 5 days: 0.5 - 12.0 Premature Newborns: < 1 day: 1.0 - 2.0 1 - 2 days: 6.0 - 8.0 3 - 5 days: 10 - 15

Unconjugated bilirubin makes up almost all of the Total bilirubin in hepatocellular failure and in Gilbert's disease. High levels of bilirubin can be caused by hepatitis, cholangitis, cirrhosis, other types of liver disease (including primary or secondary neoplasia), alcoholism, Dubin-Johnson syndrome, biliary obstruction and infectious mononucleosis. Familial hyperbilirubinemia (Gilbert's disease) is encountered as a moderate elevation otherwise unremarkable chemistries. Other factors which contribute to increased levels of total bilirubin include anorexia or prolonged fasting, hematoma, and anemia. Nicotinic acid increases the formation of bilirubin in spleen, leading to a rise in unconjugated bilirubin.

<b>Direct Bilirubin</b>		0.21	mg/dL	DCA	Adult : up to 0.3 Neonates: up to 0.5
-------------------------	--	------	-------	-----	------------------------------------------

Drugs may increase Direct Bili.: Chloro-diazoxide, Gall bladder dyes, some drugs with chemical interference. Used to evaluate liver & biliary disease, including intrahepatic & extrahepatic lesions, & biliary obstructions such as gall stones & biliary cirrhosis. Hepatocellular causes of bilirubin elevation include hepatic cirrhosis, and advanced neoplastic states. Also increased with cholestatic drug reactions, Dubin-Johnson syndrome, and Rotor syndrome. In the later two syndromes the level is usually < 5 mg/dL. It is the water soluble fraction of Bilirubin. When increased in serum, bilirubin should become positive in urine. Physiologic jaundice, occurring 2-4 days after birth, is due to lack of liver glucuronyl transferase.

<b>Total Protein</b>		7.1	g/dL	Biuret	Adult : 6.0 - 8.0 children: 5.6 - 8.0
<b>Albumin Serum</b>		4.9	g/dL	BCG	Adults: 3.5 - 5.2 Newborns: 2.8 - 4.4 Children: 3.8 - 5.4 Adolescents: 3.2 - 4.5

Increased in dehydration, lipemia, non-fasting samples or ampicillin therapy. Low levels may be due to chronic liver disease (decreased synthesis), nephritic syndrome, pregnancy, rheumatic diseases, protein-losing enteropathy or extensive burns, Malabsorption or malnutrition may also cause hypo-albuminemia.

<b>Serum Globulins</b>	L	2.2	g/dL		2.3 - 3.5
<b>A/G Ratio</b>	H	2.2	Ratio		1.5 - 2.5

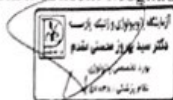
<b>Chloride (Cl-)</b>		102	m.mol/L	Endpoint	Adults: 95 - 105 Less than 1 year: 96 - 110
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Used to evaluate electrolytes, acid-base balance, and water balance. Chloride generally increases and decreases with plasma or serum sodium. Increased in dehydration, severe diarrhea, intestinal fistula, respiratory alkalosis and primary hyperparathyroidism. Decreased in overhydration, vomiting, diabetic ketosis, renal tubular damage, burns, metabolic alkalosis, Addison's disease and respiratory acidosis.

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 بیمه : آزاد  
 پزشک :



### Special Biochemistry

<u>Test</u>	<u>Flag</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>	<u>Reference Interval</u>
Vitamin E		12.3	mg/L	HPLC	0 - 17 years: 3.8 - 18.4 >= 18 years: 5.5 - 17 Significant deficiency : <3 Significant Excess : >40

Vit. E is an antioxidant for unsaturated fatty acids within lipid membranes. It is very difficult for deficiency to occur in people on a normal diet. However Vit. E is fat soluble, and malabsorption and deficiency may develop in cases of chronic intraluminal intestinal bile deficiency. This is mainly the case in premature infants and children with cystic fibrosis. Vit. E often correlates with serum lipids. Significant excess is often associated with hyperlipidemia.

Vitamin A		75.9	µg/dL	HPLC	0 - 6 yrs :11.3 - 64.7 7 - 12 yrs:12.8 - 81.2 13 - 17 yrs : 14.4 - 97.7 >= 18 yrs :32.5 - 78
Gamma Glutamyl Transferase		11	U/L	Enzymatic	Male: Up To 50 Female: Up To 32

### Trace Element (1)

<u>Test</u>	<u>Flag</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>	<u>Reference Interval</u>
Copper (Cu.)		83	µg/dL	Chemical	Men: 70 - 140 Women: 80 - 155 Babies ( birth - 6 mths ) : 20 - 70

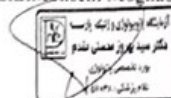
Nearly all serum copper is found to ceruloplasmin and both change proportionally. Increased levels are found in the last trimester of pregnancy, chronic leukemias, lymphomas in relaps, many anemias, age, infection & inflammatory conditions & Fanconi's syndrome. It is also raised by oral contraceptives. Deficiency is associated with Wilson's disease, nephrosis, cystic fibrosis, Menke's syndrome, chronic diarrhea, hyperalimenation, iron deficiency anemia, malnutrition and infancy.

### ECL

تاقر فی بخش

<u>Test</u>	<u>Flag</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>	<u>Reference Interval</u>
Free T3 (FT3) ECL		5.80	pmol/L	CLIA	Male : 3.68 - 6.45 Female : 3.68 - 5.99 0 - 30 Days : 1.32 - 5.84 31day - 12 Months : 1.2 - 7.97 1 - 6 yrs : 1.52 - 7.3 7 - 11 yrs : 2.1 - 6.35

Used to assist in the diagnosis hyperthyroidism. the formation of T3 results from conversion of T4 to T3 in pripheral tissues. T3 is also synthesized by the follicular cells of the thyroid gland. Raised in hyperthyroidism, often before the T4 levels is elevated. Lowered in hypothyroidism and in chronic illness. Also increased when the concentration of TBG is raised as in pregnancy or when taking contraceptive pills or other strogens. FT3 is about 0.2 - 0.5% of total T3. FT3 is largely unaffected by variations in carrier proteins.





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 بیمه : آزاد  
 پزشک :



**Free T4 (FT4) (ECL)** 8.14 Pmol /L CLIA

Adults euthyroid : 7.7 - 15.4  
 Newborns (0 - 3 days) : 4.2 - 28.3  
 Children (4 - 30 days) : 6.3 - 33.2  
 Children (31days - 12 month) : 1.9 - 23.5  
 Children( 1 - 6 years) : 6.6 - 15.9  
 Children (7 - 11 years): 7.3 - 14.9  
 Adolescents :7.7 - 12.4

FT4 is a small part of total T4 and is usually low in hypothyroidism and increased in hyperthyroidism. T4 test is of particular value in determining thyroid status in patients with an abnormal TBG level such as during pregnancy, esteroen or androgen therapy, use of contraceptive pills, or a congenitally abnormal TBG level.

**Anti Thyroid Peroxidase (TPO)** 2.19 IU/mL CLIA Up to 9

Specificity: 80%

Anti TPO are found in 71-97% of Graves disease and 91-99% of Hashimoto's thyroiditis patients.

The increased level of Anti TPO in serum can be useful in the assessment of a number of thyroid disorders. More than 90% of the patients with Autoimmune thyroiditis (Hashimoto's thyroiditis) have thyroglobulin or TPO antibodies.

Anti TPO have also found in most patients with idiopathic hypothyroidism, Graves' disease, and less frequently in patients with other thyroid disorders.

**DHEA- SO4 (ECL)** 435.97 µg/dL CLIA

<1 week:	100 - 620
1-4 week:	30 - 440
1 - 12 month:	5 - 132
1-4 yr :	0 - 20
5-10 y :	3 - 90
Age-----Male-----Female	
11-14yr:	22 - 240 32 - 286
15-19yr:	70 - 486 63 - 360
20-24yr:	200 - 498 140 - 400
25-34yr:	150 - 452 100 - 350
35-44yr:	92 - 440 60 - 330
45-54yr:	45 - 336 32 - 250
55-64yr:	50 - 300 18 - 200
65-70yr:	30 - 250 9 - 250
>70yr:	15 - 120 13 - 160

**Prostatic Specific Antigen (PSA)** H 1.886 ng/mL ECL

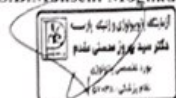
36 - 45 yr : Upto 1.3  
 45 - 55 yr : Upto 2.1  
 55 - 65 yr : Upto 3.2  
 65 - 81 yr : Upto 6.4

PSA is used for the detection of carcinoma of the prostate and monitoring it's treatment. It is highly specific for prostate tissue and is elevated in prostate cancer, benign prostatic hyperplasia (BPH), and prostatitis. Values also increase with age and there is intra-individual variation from day in day.

**Serum IgE** 107.3 IU/mL CLIA

0 - 2( YRS ) : < 97  
 > 2( YRS ) : 1 - 190

The levels of circulating IgE in serum are extremely low compared to the other immunoglobulins. Increased in certain allergic diseases (parasitic infections), broncopulmonary aspergilosis, certain drus, atopic disease, eczema), asthma (60%), hay fever (30%), and in IgE myeloma. Decreased in some advanced neoplasms, ataxia telangiectasia, some cases of agammaglobulinemia, cases of hypersensitivity.





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بیمه: آزاد  
پزشک:

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سن بیمار: ۲۷ سال  
شماره: ۴۶۹۱۷



ECL Continue ..

ناظر فنی بخش:

Anti Thyroglobulin : Anti T.G  
(ECL)

H 10.61 IU/mL CLIA

Normal : < 4.0  
Elevated >= 4.0

Diag. Specificity: 95% Diag. Sensitivity for Graves disease: 20 - 40% Diag. Sensitivity for Hashimoto Thyroiditis: 60-85% The test is frequently done in combination with Thyroid Microsomal Ab. since autoimmune thyroiditis may demonstrate a response to antigen other than thyroglobulin. Other autoimmune disorders such as Sjogrens syndrome, SLE, RA and autoimmune hemolytic anemia may be positive for thyroid antibodies, as may patients with myxedema, granulomatosis, thyroiditis, thyrotoxicosis, non-toxic nodular goiter, pernicious anemia, and thyroid carcinoma. Normal individual especially elderly females may also have this antibody.

General Hormone

ناظر فنی بخش:

Test  
Vitamin C

Flag Result  
0.6

Unit  
mg/dL

Method  
Chemical

Reference Interval

Significant deficiency : < 0.3  
Insufficient intake : 0.3 - 0.6  
Sufficient intake : > 0.6  
Normal range : 0.6 - 2

Coagulation

ناظر فنی بخش: دکتر فخرالدین صبا

Test  
PT

Flag Result

Unit

Method

Reference Interval

Patient Time

12.0

Sec

Drugs may increase PT:  
Acetaminophen, Allopurinol, Diazoxide, Disulfiram, Ethacrynic acid, Heparin, Mercaptopurine, Methylidopa, Methylphenidate, Monamine oxidase (MAO) inhibitors, Nalidixic acid, Nortriptyline, Sulfapyrazone, Sulfonamides (long-acting), Thyroid drugs, Tolbutamide.

Drugs that decrease PT:  
Barbiturates, Ethchlorvynol, Glutethimide, Griseofulvin, Heptabarbital, Vitamin K.

Drugs may decrease PT:  
Adrenocortical steroids, Birth control pills, Cholestyramine, Colchicine, Meprobamate, Rifampin.

Pt Activity

100

%

International Normalized Ratio

1.0

Ratio

Normal Individuals : Up to 1.2  
during anticoagulant therapy : 2.0 - 3.0  
With prosthetic heart valve : 3.0 - 4.4

PT.Control Time

12.0

Sec

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