

Clinical Tests Reference Ranges

Items		Reference ranges		Units	Test Equipment and Analysis Method		Mesurement Facility	
		Male	Female					
Biochemistry								
Protein,Total		6.7-8.3		g/dL	Beckman Coulter, Inc. AU5800	Biuret method		
Albumin		3.8-5.2		g/dL		Improved BCP method		
Albumin/Globulin Ratio		1.1-2.0						
Asparate aminotransferase		10-40		U/L		JSCC standardised method		
Alanine aminotransferase		5-45		U/L		JSCC standardised method		
Lactate dehydrogenase		124-222		U/L		IFCC standardised method		
Bilirubin,Total		0.4-1.5		mg/dL		Enzymatic assay		
Bilirubin,Direct		0.0-0.2		mg/dL		Enzymatic assay		
Bilirubin,Indirect		0.4-1.3		mg/dL				
Alkaline phosphatase		38-113		U/L		IFCC standardised method		
γ -Glutamyltransferase		≤80	≤30	U/L		JSCC standardised method		
Leucine aminopeptidase		45-81	37-61	U/L		L-leusyl-p-nitroanilid method		
Cholinesterase		234-493	200-452	U/L		JSCC standardised method		
Creatine kinase		60-270	40-150	U/L		JSCC standardised method		
Amylase		44-132		U/L		Enzymatic assay		
Blood urea nitrogen		8.0-20.0		mg/dL		Urease-GDH method		
Creatinine		0.61-1.04	0.47-0.79	mg/dL		Enzymatic assay		
Uric acid		3.8-7.0	2.5-7.0	mg/dL		Enzymatic assay		
Sodium		137-147		mEq/L		ISE(Ion Selective Eelectrode)		
Chloride		98-108		mEq/L		ISE(Ion Selective Eelectrode)		
Potassium		3.5-5.0		mEq/L		ISE(Ion Selective Eelectrode)		
Calcium		8.4-10.4		mg/dL		Arsenazo III method		
Inorganic Phosphate		2.5-4.5		mg/dL		Enzymatic assay		
Magnesium		1.9-2.5		mg/dL		Enzymatic assay		
Cholesterol,Total		120-219		mg/dL		Enzymatic assay		
Cholesterol,LDL		65-139		mg/dL		Enzymatic assay (Direct method)		
Cholesterol,HDL		40-85	40-95	mg/dL		Enzymatic assay (Direct method)		
Triglyceride(s)		30-149		mg/dL		Enzymatic assay(Free glycerol remove method)		
Glucose		70-109		mg/dL		Enzymatic assay		
C-Reactive protein		≤0.30		mg/dL		Latex agglutination nephelometry		
HCO3-		22.6-31.4		mmol/L		Enzymatic assay		
Hematology								
White blood cell count		3300- 9000		/ μ L	Sysmex Corporation XN-1000	Flow Cytometry method	SUMIDA HOSPITAL	
Red blood cell count		430- 570	380- 500	× 10 ⁴ / μ L		DC detection method		
Hemoglobin		13.5-17.5	11.5-15.0	g/dL		SLS-Hb method		
Hematocrit		39.7- 52.4	34.8- 45.0	%		DC detection method		
Mean corpuscular volume		85-102		fL				
Mean corpuscular hemoglobin		28.0- 34.0		pg				
Mean corpuscular hemoglobin concentration		30.2-35.1		%				
Platelet count		14.0-34.0		× 10 ⁴ / μ L		DC detection method		
Reticulocytes		4-19		%o		Flow Cytometry method		
Differential white blood cell count	Neutrophils	40.0-75.0		%		Flow Cytometry method		
	Lymphocytes	18.0-49.0		%				
	Monocytes	2.0-10.0		%				
	Eosinophils	0.0-8.0		%				
	Basophils	0.0-2.0		%				
	Neutrophils absolute count			× 10 ² / μ L				
	Lymphocytes absolute count			× 10 ² / μ L				
	Monocytes absolute count			× 10 ² / μ L				
Eosinophils absolute count			× 10 ² / μ L					
Basophils absolute count			× 10 ² / μ L					
Reticulocytes absolute count				× 10 ⁴ / μ L				
Urinalysis								
Color					Eye sight			
Specific gravity		1.006-1.030			Refractometer method			
pH		5.0-7.5			Siemens Healthcare Diagnostics Corporation Clinitek Advantus	Testing paper		
Glucose		(-)						
Protein		(-)						
Occult blood		(-)						
Ketone bodies		(-)						
Bilirubin		(-)						
Urobilinogen		(+-)						
Nitrite		(-)						
Leukocytes		(-)						
Turbidity					Eye sight			
Sedimentary test,Erythrocytes				/HPF	Microscopic			
Sedimentary test,Leukocytes				/HPF				
Sedimentary test, Squamous epithelial cells				/HPF				
Drug testing,Urine		(-)			Gold colloids particle immunoassay			
Methadone test		(-)			Immuno-chromatography			
Pregnancy test					Immuno-chromatography			
Cotinine test		(-)			Immuno-chromatography			
Coaglation tests								
Prothrombin time;seconds		9.4-12.5		sec	IL JAPAN Corporation ACL TOP300	Coagulometric mesurements		
Prothrombin time;Activity		70-100		%				
Prothrombin time;INR		0.85-1.15						
Activated partial thromboplastin time		25.0-36.0		sec				
Fibrinogen		155-415		mg/dL		clotting method adding thrombin		

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Immunology								
Syphilis test,RPR		(-)		Beckman Coulter, Inc. AU5800 Abbott Japan Corporation ARCHITECT2000		Latex agglutination nephelometry	SUMIDA HOSPITAL	
Syphilis test,TP antibody		(-)				Latex agglutination nephelometry		
HBs antigen		(-)				CLIA		
HCV antibody,2nd generation		(-)				CLIA		
HIV antigen and antibody		(-)				CLIA		
HBs antibody		(-)				CLIA		
HBc antibody		(-)				CLIA		
Others								
Breath alcohol test		0.00		mg/L	Semiconductor sensor			
Occult blood,Fecal		(-)		Immuno-chromatography				
SARS-CoV2		Negative		Tosoh Corporation TRCReady-80		TRC		
SARS-CoV-2 Agtest		(-)		Immuno-chromatography				
eGFR	Male:			mL/min/1.73m ²	194*Cre ^{-1.094*age^{-0.287}}			
	Female:				194*Cre ^{-1.094*age^{-0.287}} *0.739			
eGFR(EPI2021-J)	Male:			mL/min/1.73m ²	142*(Cre/0.9) ^{-0.302*0.9938^{age*0.813}} (Cr<=0.9)			
					142*(Cre/0.9) ^{-1.2*0.9938^{age*0.813}} (Cr>0.9)			
	Female:			mL/min/1.73m ²	142*(Cre/0.7) ^{-0.241*0.9938^{age*1.012*0.813}} (Cr<=0.7)			
					142*(Cre/0.7) ^{-1.2*0.9938^{age*1.012*0.813}} (Cr>0.7)			
eGFR(EPI2021)	Male:			mL/min/1.73m ²	142*(Cre/0.9) ^{-0.302*0.9938^{age}} (Cr<=0.9)			
					142*(Cre/0.9) ^{-1.2*0.9938^{age}} (Cr>0.9)			
	Female:			mL/min/1.73m ²	142*(Cre/0.7) ^{-0.241*0.9938^{age*1.012}} (Cr<=0.7)			
					142*(Cre/0.7) ^{-1.2*0.9938^{age*1.012}} (Cr>0.7)			
GFR(MDRDJ)	Male:			mL/min/1.73m ²	175*Cre ^{-1.154*age^{-0.203*0.808}}			
	Female:				175*Cre ^{-1.154*age^{-0.203*0.742*0.808}}			
GFR(MDRD)	Male:			mL/min/1.73m ²	175*Cre ^{-1.154*age^{-0.203}}			
	Female:				175*Cre ^{-1.154*age^{-0.203*0.742}}			
CCR (Cockcroft-Gault)	Male:			mL/min	(140-age)*weight/(72*Cre)			
	Female:				(140-age)*weight/(72*Cre)*0.85			
Ca(Alb/adjust) Payne's formula				mg/dL	Ca+(4-ALB)			
Ca(Alb/adjust) KDOQI-2 formula				mg/dL	Ca+0.8×(4.0-ALB)			

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