

Variable	Full name	Specimen	Method	Reagent producer	Measure machine
ALB	Albumin	Serum	BCG method	Randox , UK	Hitachi 7600
Y48_4	Albumin (field measured)	Serum	BCG method	Randox , UK	Hitachi 7600
ALT	Alanine Aminotransferase	Serum	IFCC Enzyme Method	Randox , UK	Hitachi 7600
Y48_2	Alanine Aminotransferase (field measured)	Serum	IFCC Enzyme Method	Randox , UK	Hitachi 7600
ApoB	Apolipoprotein B	Serum	Immunoturbidimetric	Randox , UK	Hitachi 7600
Apo_A	Apolipoprotein A-1	Serum	Immunoturbidimetric	Randox , UK	Hitachi 7600
CRE	creatinine	Serum	Picric acid method	Randox , UK	Hitachi 7600
FER	Ferritin	Serum	Radioimmunology	North Institute of Bio-Tech,China	Gamma counter XH-6020,China
GLUCOSE	Glucose	Serum	GOD-PAP	Randox , UK	Hitachi 7600
Y48_1	Glucose (field measured)	Serum	GOD-PAP	Randox , UK	Hitachi 7600
HDL	High-density lipoprotein cholesterol	Serum	Enzymatic method	Kyowa, Japan	Hitachi 7600
CRP	High-sensitivity CRP	Serum	Immunoturbidimetric	Denka Seiken, Japan	Hitachi 7600
INS	Insulin	Serum	Radioimmunology	North Institute of Bio-Tech,China	Gamma counter XH-6020,China
LDL	Low-density lipoprotein cholesterol	Serum	Enzymatic method	Kyowa, Japan	Hitachi 7600
LP_A	Lipoprotein (a)	Serum	Immunoturbidimetric	Denka Seiken, Japan	Hitachi 7600
Mg	Serum magnesium	Serum	Xylidyl Blue Colorimetric method	Randox , UK	Hitachi 7600
TC	Totle cholesterol	Serum	CHOD-PAP	Kyowa, Japan	Hitachi 7600
Y48_5	Totle cholesterol	Serum	CHOD-PAP	Kyowa, Japan	Hitachi 7600
TG	Triglyceride	Serum	GPO-PAP	Kyowa, Japan	Hitachi 7600
TP	Total protein	Serum	Biuret method	Randox , UK	Hitachi 7600
Y48_3	Total protein	Serum	Biuret method	Randox , UK	Hitachi 7600
TRF	Transferrin	Serum	Nephelometry	Siemens, Germany	Siemens BNP
TRF_R	Soluble Transferrin receptor	Serum	Nephelometry	Siemens,Germany	Siemens BNP
UA	Uric acid	Serum	Enzymatic colorimetric method	Randox , UK	Hitachi 7600
UREA	Urea	Serum	Enzymatic kinetic method	Randox , UK	Hitachi 7600
Y46_1	Hemoglobin	Whole blood, fresh	VCS	Beckman Coulter , USA	Beckman Coulter LH750
Y46_2	White blood cell count	Whole blood, fresh	VCS	Beckman Coulter , USA	Beckman Coulter LH751
Y46_3	Red blood cell count	Whole blood, fresh	VCS	Beckman Coulter , USA	Beckman Coulter LH752
Y46_4	Platelet count	Whole blood, fresh	VCS	Beckman Coulter , USA	Beckman Coulter LH753
Y50	Hemoglobin A1c	Whole blood, fresh	HLC/HLC/HPLC	Tosoh, Japan/Bio-Rad, USA/Primus, USA	HLC-723 G7/D10/PDQ A1c (All calibrated with Bio-Rad)

Variable	Full name	Unit	Factor	Linearity	CJFH Reference 1	CJFH Reference 2	Minnesota Reference
ALB	Albumin	g/L		2.87-60	35-55	35-55 g/L	1 y - 54 y: 39-51g/L; 55 y-: 33-49 g/L
ALT	Alanine Aminotransferase	U/L		4.25-400	0-40	< 40 U/L	0-19 y: 0-50 U/L; 20 y-: 0-70 U/L (men); 0-50 u/L (women)
ApoB	Apolipoprotein B	g/L		11.5-219mg/dL	0.6-1.14	0.6-1.14 g/L	Men: 55-140 mg/dL; Women: 55-125 mg/dL
Apo_A	Apolipoprotein A-1	g/L		5.78-234mg/dL	1.2-1.76	120-176 mg/dL	men: 94-178 mg/dL; women: 101-199 mg/dL
CRE	creatinine	µmol/L	/88.4	0.16-20mg/dl	35-106	0.40-1.20 mg/dL	22 d - 8 y: 0.15-0.53 mg/dl; 9-14 y: 0.39-0.73 mg/dl; 15-19 y: 0.50-1.00 mg/dl; 20 y-: 0.66-1.25 mg/dl (men); 20 y-: 0.52-1.04 mg/dl (women)
CRP	High-sensitivity CRP	mg/dL		0.01-32mg/dL	0-0.3	< 0.3 mg/dL	Low Risk: <1.0 mg/L; Average Risk: 1.0-3.0 mg/L; High Risk >3.0 mg/L; Acute Inflammation >8.0 mg/L
FER	Ferritin	ng/ml			Men: 12-245; Female: 5-130	Men: 12-245; Female: 5-130	Men: 6 mo - 14 y: 7-142 ng/mL; 15-44 y: 20-300 ng/mL; 45-127y: 20-300 ng/mL; Women: 6 mo - 14 y: 7-142 ng/mL; 15-44 y: 10-120 ng/mL; 45-127y: 10-300 ng/mL
GLUCOSE	Glucose	mmol/L	*18	0.013-22.2	3.61-6.11	65-110 mg/dL	<95 mg/dL
HDL	High-density lipoprotein cholesterol	mmol/L	/0.02586	1-100mg/dL	1.00-2.20	38.7-85.1 mg/dL	Men: >= 40 mg/dL; Women: >= 50 mg/dL
INS	Insulin	µIU/ml			5-25	5-25 mU/L	0-20 mU/L
LDL	Low-density lipoprotein cholesterol	mmol/L	/0.02586	1-700mg/dL	<3.12	<120 mg/dL	Optimal: <100 mg/dL; Near Optimal: 100-129 mg/dL; Borderline High: 130-159 mg/dL; High: 160-189 mg/dL; Very High: ≥190 mg/dL
LP_A	Lipoprotein (a)	g/L		0.5-80.0mg/dL	<0.3	<0.3 g/L	<30 mg/dL
Mg	Serum magnesium	mmol/L	*2.43	0.62-12.6	0.78-1.27	1.90-3.09 mg/dL	1.6-2.3 mg/dl
TC	Total cholesterol	mmol/L	/0.02586	5-800mg/dL	<5.2	< 200 mg/dL	< 200 mg/dL
TG	Triglyceride	mmol/L	/0.01129	1-1000mg/dL	<1.7	<150 mg/dL	Normal: <150 mg/dL; Borderline high: 150-199 mg/dL; High: 200-499 mg/dL; Very high: ≥500 mg/dL
TP	Total protein	g/L		13-130	60-80	60-80 g/L	0-9 y: 65-84 g/L; 10 y and older: 68-88 g/L
TRF	Transferrin	g/L			2.0-3.6	200-360 mg/dL	210-360 mg/dL
TRF_R	Soluble Transferrin receptor	mg/L		0.14-4.4mg/L	0.76-1.76	0.76-1.76 mg/L	Men (18 y-): 2.2-5.0 mg/L; Women (18 y-): 1.9-4.4 mg/L
UA	Uric acid	µmol/L	/59.5	0.98-1189	150-420	2.52-7.06 mg/dL	men: 5 d-9 y: 1.8-5.1mg/dl; 10-11 y: 2.3-5.4mg/dl; 12-13 y: 2.7-6.7 mg/dl; 14-15 y: 2.4-7.8 mg/dl; 16 y-: 3.5-8.5mg/dl; women: 5 d-9 y: 1.8-5.1mg/dl; 10-11 y: 3.0-4.7 mg/dl; 12-16 y: 3.0-5.8 mg/dl; 17-34 y: 2.5-6.2 mg/dl; 35-44 y: 2.5-7.0 mg/dl; 45 y-: 2.5-7.5mg/dl
UREA	Urea	mmol/L	/0.166	2.13-50	2.78-7.85	16.75-47.29 mg/dL	4-49 y: 5-24 mg/dl; 50 y-: 7-30 mg/dl
Y46_1	Hemoglobin	g/L			110-160	110-160 g/L	Men: 5-9 y: 10.5-14.0 g/dL; 10-17 y: 11.7-15.7 g/dL; 18 y-: 13.3-17.7 g/dL; Women: 5-9 y: 10.5-14.0 g/dL; 10-17 y: 11.7-15.7 g/dL; 18 y-: 11.7-15.7 g/dL
Y46_2	White blood cell count	10 ⁹ /L			4-10	4-10	5-9 y: 5.0-14.5; 10-17 y: 4.0-11.0; 18 y-: 4.0-11.0
Y46_3	Red blood cell count	10 ¹² /L			3.5-5.5	3.5-5.5	5-17 y: 3.7-5.3; 18 y-: 3.8-5.2
Y46_4	Platelet count	10 ⁹ /L			100-400	100-400	150-450
Y50	Hemoglobin A1c	%			5-8	5-8	4.3-6.0