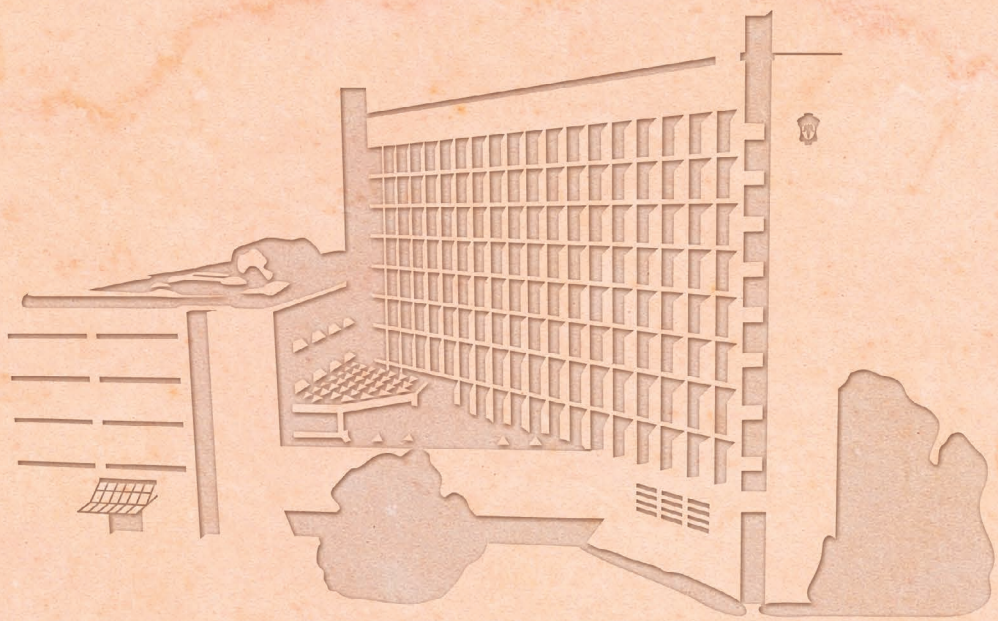
One-day Medical Checkup

Understanding Your Test Results

Please use this booklet to help you understand your medical checkup results and manage your health.



St. Luke's International Hospital Affiliated Clinic
Center for Preventive Medicine

One-day Medical Checkup Understanding Your Test Results

page

I. Introduction

This booklet on “Understanding Your Test Results” provides a description of each test item included in the One-day Medical Checkup conducted at our center, the purpose and limitations of those test, as well as information on how to use your results to proactively manage your health. While having medical checkups does not guarantee you 100% protection, we hope that the “Test Purpose, Description, and Limitations” contained in our pamphlet and our guide on how to use your medical checkups together with this booklet will give you a better understanding of what each of the test items involve and what the results indicate so as to enable you to use the results of your standardized medical checkup to proactively manage your health.

It is important that the consultations you have, the lifestyle advice you are given and the comments provided in the Results Sheet are tailored to meet your individual circumstances so that you can be proactive in managing your health. The Results Sheet may also include results from imaging tests and pathological cytology not discussed during your consultation. Particularly in the case of these test items, you should check the Results Sheet and refer to the explanation provided in this booklet. Rest assured that we prioritize diagnostic accuracy and double-check the test results we obtain.

This may mean that the explanation provided to you by your physician during your consultation may differ from the results presented in the Results Sheet. (We will inform you if this applies to you.)

1 Reference Values

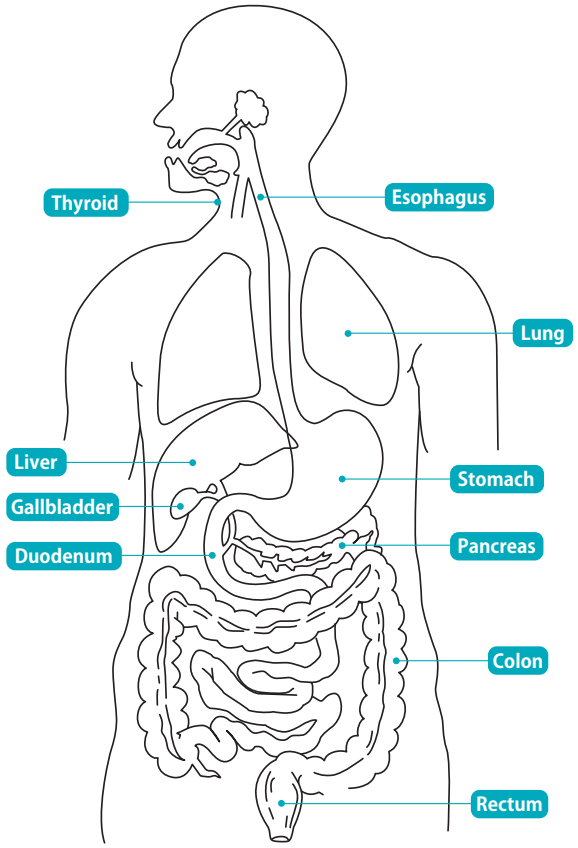
The majority of "reference values" are based on the test values seen in 95% of the healthy population. This can mean that in some cases, people's results may fall slightly outside these "Reference Values" despite there being no cause for concern. Falling outside the "Reference Values" does not necessarily mean that you have a disease. You should bear in mind that there are individual differences and differences depending on the facility.
While the reference values used at our center are, for the most part, based on the reference ranges provided by the Japanese Committee for Clinical Laboratory Standards (JCCLS), in the case of some test items, we use "clinical decision limits" based on various medical guidelines and the data collected by our center.
If there are any changes to international measurement methods or revisions to guidelines, etc., we make changes and corrections as necessary.
If you undergo regular medical checkups at our center, please also refer to any changes over time.

2 Medical Checkup Assessment Results

Description of Assessment Classifications

A	There were no abnormalities
B1	There was a slight abnormality but nothing of concern
B2	You should get tested every year
C6	You must make lifestyle changes and monitor the progress of your condition You should be tested again after 6 months
C3	You must make lifestyle changes and monitor the progress of your condition You should be tested again after 3 months
D1	You should undergo a thorough examination at a medical institution
D2	You should be treated at a medical institution

3 Target Organs and Test Items



Thyroid ..... Blood Test (TSH, FT_4), Neck palpation
Esophagus ..... Upper Gastrointestinal Examination
Stomach ..... Upper Gastrointestinal Examination
Duodenum ..... Upper Gastrointestinal Examination
Lungs ..... Chest X-ray / Pulmonary Function Tests / Chest CT
Heart ..... Electrocardiogram, Chest X-ray, Heart Auscultation
Gall Bladder/ Liver/ (Pancreas) ..... Abdominal Ultrasound, Blood Tests {Bilirubin, GOT(AST), GPT(ALT), ALP, γ-GTP, Hepatitis Virus Markers, etc.}
Kidneys ..... Abdominal Ultrasound, Urinalysis, Blood Tests (Creatinine, eGFR)
Colon ..... Fecal Occult Blood Test (using samples from 2 consecutive days)
Uterus ..... Gynecological Examinations (Cervical Cytology, Gynecological Inspection)
Breasts ..... Mammography / Breast Ultrasound
Eyes ..... Visual Acuity Test, Fundoscopy, Ocular Tonometry
Ears ..... Hearing Test
Bones ..... Bone Density Test
Prostate ..... Blood Test (PSA)

II. Tests Items Included in the One-day Medical Checkup

Physical Examination 1

We carry out a physical examination to supplement the medical tests we perform to facilitate the purpose of your medical checkup.
We record any abnormal findings we observe in the physical examination.

Body Structure 2

We use equipment to measure height, weight, and body fat percentage at the same time. Knowing the height of a person is necessary in order to calculate their nutritional requirements and determine their reference values for the respiratory function test.

BMI

BMI is calculated as **Measured Weight (kg) ÷ Height (m) ÷ Height (m).**

(Reference Values: 18.5 - 24.9)

BMI stands for **Body Mass Index**. This index is used internationally to determine how overweight someone is. BMI closely correlates with the total amount of body fat a person has. In Japan, a BMI of 25 and above is considered obese and the higher a person's BMI, the more likely they are to suffer from health issues. On the other hand, being underweight (thin) with a BMI of below 18.5, also brings with it increased risk of poor health and illness. There are, however, limitations to BMI including the potential to overestimate body fat in athletes and people with a lot of muscle and the potential to underestimate body fat in older people and those with little muscle.

Criteria for Determining Obesity
(2022 Japan Society for the Study of Obesity)

BMI (kg/m^2)	Results		WHO Criteria
BMI<18.5	Underweight		Underweight
18.5 ≦ BMI<25	Normal Weight		Normal Range
25 ≦ BMI<30	Obesity (Class I)		Pre-obese
30 ≦ BMI<35	Obesity (Class II)		Obese class I
35 ≦ BMI<40	Severe Obesity	Obesity (Class III)	Obese class II
40 ≦ BMI		Obesity (Class IV)	Obese class III

Ideal Body Weight

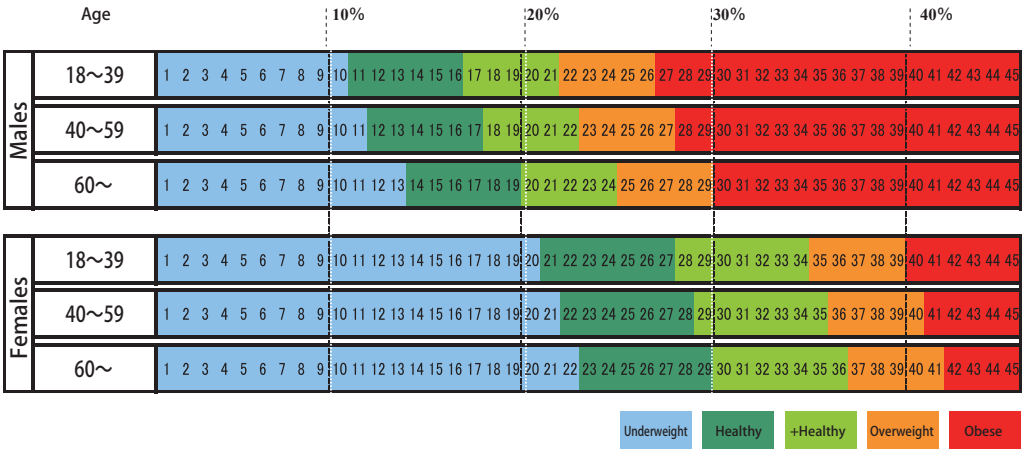
Ideal Body Weight is calculated as **Height (m) x Height (m) x 22.**

Japanese people with a BMI of 22 are least likely to be susceptible to illness.

Body Fat Percentage

A person's body fat percentage represents the percentage of their body weight which is fat. At our center, we use "Bioelectrical Impedance Analysis" to estimate your body fat percentage based on the level of resistance measured when a weak current is passed through your body. It is important to understand the changes in your body fat percentage to use as a guideline.

Criteria for Determining Body Fat Percentage (DXA Method & WHO Standards)



Abdominal Circumference Measurement

(Reference Values:
Males: Below 85cm
Females: Below 90cm)

We screen for visceral fat accumulation by measuring the circumference of the abdomen at navel height. This is an important criterion for diagnosing metabolic syndrome. Even with a BMI of below 24, men with an abdominal circumference of 85cm and above and women with an abdominal circumference of 90cm and above could still be diagnosed with metabolic syndrome if 2 or more of their results for blood pressure, blood glucose or lipids fall outside of the reference values. You need to take early measures to reduce visceral fat since there is a high risk of visceral fat causing heart disease and strokes. However, simply having a large abdominal circumference does not mean that you have metabolic syndrome.

3 Blood Pressure / Pulse Rate Measurements

Blood Pressure

Blood pressure is the force with which blood pushes against the walls of the blood vessels and is determined based on the amount of blood pumped from the heart and the resistance (flexibility) of the blood vessels. Blood pressure is at its highest during heart contraction (systolic blood pressure = the upper number) and at its lowest during heart diastole (diastolic blood pressure = the lower number). High blood pressure is a disease with no subjective symptoms. People are only diagnosed with high blood pressure if their blood pressure is 140/90mmHg and above (for either or both) despite taking multiple readings on different days. The ideal blood pressure reading is below 120/80mmHg. The higher a person's blood pressure, the higher their risk of disease (strokes, heart disease, kidney disease and dementia, etc.) and death. It is important to prevent disease through the early detection of hypertension and appropriate antihypertensive treatment. Nowadays, people are encouraged to measure their blood pressure at home. Home blood pressure monitoring is useful for determining “white coat hypertension” which is when a person’s blood pressure rises due to feeling nervous in front of medical staff in white coats and “masked hypertension” which is when a person's blood pressure is normal in the hospital but high in their everyday life.

Blood Pressure Classifications in Adults (2019 The Japanese Society of Hypertension)

Classifications	Blood Pressure in the Examination Room (mmHg)		
	Systolic Blood Pressure		Diastolic Blood Pressure
Normal Blood Pressure	<120	and	<80
High Normal Blood Pressure	120-129	and	<80
High Blood Pressure	130-139	and/or	80-90
Stage 1 Hypertension	140-159	and/or	90-99
Stage 2 Hypertension	160-179	and/or	100-109
Stage 3 Hypertension	≧ 180	and/or	≧ 110
(Isolated) Systolic Hypertension	≧ 140	and	<90

Pulse Rate

(Reference Values:
50-100 beats/minute)

Heart rate is measured by counting the number of heartbeats per minute.

4 Electrocardiogram

At our center, we take electrocardiograms at rest. Electrocardiograms can reveal if there is any suspected arrhythmia, myocardial infarction, cardiac hypertrophy, or other conditions.
Although it does not necessary mean that you have an illness, if an abnormality is detected in your electrocardiogram, you should definitely undergo a secondary examination if recommended to do so.
At the same time, if you have any concerns regarding your heart such as angina or arrhythmia, you should go and see a specialist even if no abnormalities are detected in your electrocardiogram.

5 Respiratory Function Tests

Respiratory function tests measure the level of your pulmonary ventilation capacity. They, along with your chest X-ray, are important for seeing how your respiratory system is working.
If you are a smoker and your test results are low, we strongly recommend that you give up smoking.

FVC
(Forced Vital Capacity)

FVC (Forced Vital Capacity) is the amount of air you are able to exhale when you inhale as deeply as possible and exhale as hard as you can.

%FVC

(Reference Values: 80% and above)

%FVC is calculated as **(Vital Capacity ÷ Predicted Value) x 100.**

It shows your actual FVC (Forced Vital Capacity) as a percentage of "predicated vital capacity" calculated based on your sex, age, and height.

*As of April 1, 2018, the predicted value is calculated using the formula recommended by the Japanese Respiratory Society which also factors in the physical build of Japanese people.

FEV1
(Forced Expiratory Volume in 1 second)

FEV1 is the amount of air you are able to exhale in the first second after taking the biggest breath you can and exhaling as hard as you can.

FEV1/FVC Ratio

(Reference Value: 70% and above)

FEV1/FVC Ratio shows the ratio of the forced expiratory volume in one second (FEV1) to the forced vital capacity (FVC). It looks at the ratio of the volume at the moment you exhale.

A low ratio is suggestive of a disease which makes it difficult to quickly exhale the air inhaled (eg., asthma, COPD).

%FEV1

(Reference Values: 80% and above)

%FEV1 shows your actual forced expiratory volume in one second (FEV1) as a percentage of your predicated forced expiratory volume in one second. It serves as an indicator of the severity of chronic obstructive pulmonary disease (COPD) and other conditions which reduce forced vital capacity.

Chest X-ray 6

The purpose of a chest x-ray is to detect any inflammation such as pneumonia, bronchitis, or pulmonary tuberculosis as well as lung cancer. It may also reveal information on cardiac hypertrophy, scoliosis, fracture scars, surgical scars, and other issues falling within the area x-rayed.

Upper Gastrointestinal Examinations 7

Upper Gastrointestinal X-ray

In an upper gastrointestinal x-ray, an x-ray is taken after you swallow barium which enables an image of the entire esophagus, stomach, and duodenum to be taken. The examination reveals whether there is any swelling, deformation, or presence of lesions in the esophagus, stomach, or duodenum. If the x-ray shows indications of cancer, etc. a more detailed investigation will be made by carrying out an endoscopy. Be sure to go in for a secondary examination if recommended to do so.

Upper Gastrointestinal Endoscopy

An upper gastrointestinal endoscopy is used to make a direct observation of the mucous membranes of the esophagus, stomach, and duodenum is performed to diagnose tumors (such as stomach cancer and esophageal cancer, etc.), ulcers (such as gastric ulcers and duodenal ulcers, etc.), inflammation (such as esophagitis and gastritis), and polyps, etc. If necessary, a biopsy (taking a sample of the mucous membrane for a tissue examination) will be taken for further examination.

Colon Screening Test (Stool Occult Blood Test / Using 2 Samples) 8

The purpose of colon screening test (stool occult blood test) is to detect colon disease including colon polyp and colon cancer.

We provide customers with "two sticks" to prepare stool samples, because the reliability of the test is higher in "two sample test" than in "one sample test". Therefore, we recommend that you submit two fecal samples.

Upper Abdominal Ultrasound 9

The purpose of upper abdominal ultrasound (AUS) test is to examine the shape and size of solid organs in the upper abdominal area, the liver, gallbladder, pancreas, spleen, kidneys and abdominal aorta. Hollow organs (stomach, intestine, colon) cannot be evaluated by AUS, because ultrasound cannot go through the air and hollow organs contain some air.

The AUS test is a non-invasive and safe method. However, extreme overweight decreases the accuracy of the test because thick fat inhibits ultrasound progression. On the contrary, extreme underweight also decreases test accuracy because the scan probe does not fit bumpy skin. In addition to that, the rich intestinal gas limits the accuracy of the AUS test.

The AUS test does not intend to examine lower abdominal organs (urinary bladder, uterus, ovary, etc.), because the precise evaluation of lower abdominal organs needs another kind of machine and preparation. If some obvious abnormality of lower abdominal organs is suspected by the AUS test, these will be stated in the report only as "suspected cases".

10 Blood Cell Count

Blood Cell Count are used to examine the cellular components of blood (blood cells) to check for anemia, infection, and blood disorders.

WBC (White Blood Cells)

(Reference Values:
3.3 ～ 8.6 × $10^3/\mu L$)

White blood cells protect the body from pathogens and we can determine whether you have a blood disease, infection, or inflammation, etc. based on an increase or decrease in these cells. (Smoking may also cause an increase in white blood cells.)

Hemogram

There are five types of white blood cells (neutrophils, lymphocytes, monocytes, eosinophils, and basophils) and a hemogram shows what percentage of each is in your blood. These white blood cells have different functions and their numbers increase or decrease when abnormalities occur in the body. Although in a hemogram, blood cell count is recorded as a percentage (%), at our center, we have established reference values which also consider the absolute count (= white blood cell count x percentage (%)) to be important in order to make a comprehensive determination. Immature white blood cells (immature neutrophils) and atypical or abnormal lymphocytes not normally seen can also be observed.

The absolute count is abnormal in the following cases.

Neutropenia: Below 1,000

Neutrophils fight pathogens and protect our bodies.

Lymphocytosis: 5,000 and above

Lymphocytes play a role in immunity and antibody production.

Monocytosis: 1,000 and above

Monocytes, like neutrophils, play a role in fighting infection. Monocytes also turn into macrophages and work as cells that process foreign substances in tissues.

Eosinophilia: 1,500 and above

Eosinophils protect us against parasites and infections. They are involved in allergic responses and help to control inflammation.

Basophilia: 400 and above Basophil Percentage: 5% and above

Basophils are involved in immunity, wound repair, and allergic responses.

RBC (Red Blood Cells)

(Reference Values:
Males: 4.35 ～ 5.55 × $10^6/\mu L$
Females: 3.86 ～ 4.92 × $10^6/\mu L$)

Red blood cells carry oxygen, which is the basis of our activities, from the lungs to all our tissues.

Hb (Hemoglobin)

(Reference Values:
Males: 13.7 ～ 16.8g/dL
Females: 11.6 ～ 14.8g/dL

Hemoglobin which is present in red blood cells, is a protein that contains iron and binds to oxygen to transport it throughout our entire bodies. Red blood cells are red because of the red pigment hemoglobin, which makes blood appear red. A low level of hemoglobin is called anemia and an elevated level of hemoglobin is called erythrocytosis (polycythemia).

Hct (Hematocrit)

(Reference Values:
Males: 40.7 ～ 50.1%
Females: 35.1 ～ 44.4%)

Hematocrit is the percentage of red blood cells in the blood. Stress, smoking, and dehydration can increase your hematocrit.

MCV (Mean Corpuscular Volume)

(Reference Values:
Males: 84.5 ～ 100.2fL
Females: 81.0 ～ 98.2fL)

MCV represents the average size of a single red blood cell. If you are diagnosed with anemia, the type of anemia you are suspected of having will be determined based on the size of your red blood cells.

MCH (Mean Corpuscular Hemoglobin)

(Reference Values:
Males: 28.3 ～ 33.9pg
Females: 26.5 ～ 32.9pg)

MCH represents the average amount of hemoglobin in each of your red blood cells.

MCHC (Mean Corpuscular Hemoglobin Concentration)

(Reference Values:
Males: 32.4 ～ 35.2%
Females: 31.6 ～ 34.5%)

MCHC represents the average concentration of hemoglobin inside a single red blood cell.

Platelets

(Reference Values:
158 ～ 348 × $10^3/\mu L$)

Platelets function to clot blood.
An extreme drop in your platelet count will make you more susceptible to bleeding.

Blood Type

Your blood type is shown using the “ABO blood group system” and the “Rh blood group system”. The blood type determined based on blood collected from the umbilical cord at birth may be inaccurate and not match your actual blood type. You should take this opportunity to double check your blood type.

Glucose Metabolism Tests 11

Fasting Plasma Glucose

(Reference Values:
61 ～ 109mg/dL)

HbA1c
(Hemoglobin A1c)

(Reference Values:
4.6 ～ 5.9% (NGSP))

The fasting blood glucose test tests to see whether or not you have diabetes or are susceptible to developing diabetes. HbA1c shows your blood glucose level for the last one to two months. We know that there is a high incidence of postprandial hyperglycemic diabetes in the Japanese population and many cases of hyperglycemia (susceptibility to diabetes) go undetected when using fasting blood glucose alone. At our center, we make a determination on glycometabolism by looking at a combination of fasting blood glucose, HbA1c, and age.
Diabetes is a major factor that contributes to a reduction in life expectancy and QOL (quality of life) due to the increased risk of cerebrovascular and cardiovascular disorders and complications specific to diabetes which are among the three leading causes of death. At our center, not only do we focus on the early detection of diabetes, we also focus on preventing the onset of diabetes as well as preventing cerebrovascular and cardiovascular disorders through the early detection of pre-diabetic conditions. If based on the results of these tests, you are recommended to take a glucose tolerance test, make lifestyle changes, see a specialist, or take other measures, it is important that you take these measures.

HbA1c

5.9 and below: Even if your blood glucose level is within the reference range, you could still be at risk for diabetes. To prevent the onset of diabetes, you should reevaluate your lifestyle habits. If you are already being treated for diabetes, a result in this range indicates that you are controlling your condition well.

6.0～6.4: A result in this range is suggestive of diabetes so you will be recommended to take a glucose tolerance test. You should set yourself targets to improve your lifestyle habits and follow through on them. If you are already being treated, you should follow the instructions provided by your attending physician.

6.5 and above: A result in this range is strongly suggestive of diabetes. You will need to be seen by a medical institution. If you are already being treated, you should follow the instructions provided by your attending physician.

*Because HbA1c is measured using a device that is more accurate than before, results may be "unable to test" or "inexact" and hemoglobinopathies may be suspected.

Lipid Metabolism Tests 12

When blood lipid levels fall outside the reference values, this is known as dyslipidemia. If levels are higher than the reference values, this is known as “hyperlipidemia” and if levels are lower, this is known as “hypolipidemia”. Dyslipidemia is divided into secondary dyslipidemia, which is caused by environmental factors such as lifestyle habits or other diseases, and primary dyslipidemia, which is caused by genetic changes.

Total Cholesterol

(Reference Values:
130 ～ 219mg/dL)

Cholesterol is a fundamental component of the cell membrane and plays an essential role in strengthening and maintaining blood vessels and synthesizing steroid hormones. However, too much cholesterol can lead to arteriosclerosis.

LDL Cholesterol

(Reference Values:
60 ～ 139mg/dL and below)

HDL Cholesterol

(Reference Values:
40 ～ 99mg/dL)

LDL cholesterol (commonly known as “bad cholesterol”) carries cholesterol to the peripheral tissues. HDL cholesterol (commonly known as “good cholesterol”) collects cholesterol from peripheral tissues and carries it to the liver. Hence, excess LDL cholesterol promotes atherosclerosis, while HDL cholesterol works to improve atherosclerosis. Hereditary low LDL cholesterol is generally asymptomatic but may be associated with fatty liver development. Very rarely is low HDL cholesterol hereditary and levels are usually reduced as a result of lifestyle habits.

Non-HDL Cholesterol

(Reference Values:
90 ～ 149mg/dL and below)

Non-HDL cholesterol is “Total Cholesterol - HDL Cholesterol” and can also be called “Total Bad Cholesterol”. There are other bad cholesterols lurking in your blood besides LDL cholesterol and the non-HDL cholesterol value represents the amount of all bad cholesterol, including these other bad cholesterols.

Triglycerides

(Reference Values:
30 ～ 149mg/dL)

Eating prior to being tested has a major impact on your triglyceride levels. If your triglyceride levels remain high, the triglycerides will be stored as subcutaneous fat and visceral fat leading to obesity, metabolic syndrome and diabetes, etc. This is a risk factor for cerebrovascular and cardiovascular disorders as well as kidney damage.
If excess triglycerides build up in the liver, this will lead to “fatty liver” development. It has recently been acknowledged that “non-alcoholic fatty liver” in those who do not drink alcohol can progress to liver cirrhosis and liver cancer. Although rare, abnormally high levels of triglycerides can lead to acute pancreatitis.

13 Thyroid Function Tests

TSH
(Thyroid-Stimulating Hormone)

(Reference Values:
0.45 ～ 4.95μIU/mL)

FT_4
(Free Thyroxine Hormone)

(Reference Values:
1.00 ～ 1.64ng/dL)

Thyroid function tests check how well your thyroid gland is working and detect whether you have an overactive or underactive thyroid. Since symptoms of thyroid dysfunction are easy to miss, at our center, we measure TSH and FT_4 hormones.
TSH is a hormone secreted by the pituitary gland in the brain. It regulates the secretion of thyroid hormones and is the most sensitive indicator of thyroid function. FT_4 is one of the thyroid hormones secreted by the thyroid gland.
Thyroid hormones are involved in regulating metabolism and affect virtually every organ in the body including the heart. In some cases, hypothyroidism can be caused by the excessive intake of iodine from seaweed such as kelp or iodine-based mouthwash.

14 Uric Acid Test

Uric Acid

(Reference Values:
3.0 ～ 7.0mg/dL)

Uric acid is a waste product of purines and is excreted via urine and the intestines. A uric acid level in the blood of over 7.0mg/dL is called hyperuricemia. Uric acid dissolves in the blood and bodily fluids but if there is too much of it, it cannot dissolve and crystallizes. Gout occurs when uric acid crystallizes in the joints causing inflammation. Gout can cause kidney stones and decreased kidney function. Elevated uric acid levels are known to increase the risk of lifestyle-related diseases.
Hyperuricemia arises as a result of having a genetic predisposition to high uric acid levels combined with various lifestyle habits. It is important to make lifestyle improvements such as reducing any excess weight and limiting your alcohol intake. Bear in mind that levels may be temporarily elevated after strenuous exercise or heavy drinking.

15 Liver Function Tests

There are many different causes of liver dysfunction. It is important to identify the cause and treat it. A comprehensive determination will be made based on the results of the following tests to see whether the cause is viral hepatitis, alcoholism, or fatty liver.
*If it is found that alcohol, overeating, or other lifestyle habits play a part, you will need to focus on evaluating these issues and try to make improvements (before the next medical checkup).

Total Bilirubin

(Reference Values:
1.5mg/dL and below)

Bilirubin causes jaundice. High levels of bilirubin can occur as a result of diseases of the liver itself, obstruction of the ducts through which bile flows (bile ducts) and some types of anemia.

AST (GOT)

(Reference Values:
32U/L and below)

ALT (GPT)

(Reference Values:
38U/L and below)

AST (GOT) and ALT (GPT) are enzymes found primarily in the liver. Levels are elevated when a person has liver damage.
A comprehensive determination will be made based on tests for hepatitis virus markers and other blood tests.

γ-GTP

(Reference Values: 90U/L and below)

γ-GTP is an enzyme is found in the liver, pancreas, blood serum, and kidneys, etc. γ-GTP increases when a person has liver damage due to alcohol, drugs, or fatty liver. It also increases when bile flow is obstructed.

ALP
(Alkaline phosphatase)

(Reference Values: 38 ~ 113U/L)

ALP is a substance found in the bones, kidneys, small intestine, bile duct, liver, and placenta, etc. Levels rise when a person has liver damage as well as when the flow of bile is obstructed, during pregnancy, during growth periods, and due to hormonal abnormalities related to bone fractures and bone metabolism. ALP levels may also be higher in people with blood types B and O.

LD (LDH)
(Lactate Dehydrogenase)

(Reference Values: 124 ~ 222U/L)

LD (LDH) is an enzyme widely distributed throughout the body including in the liver, heart, kidneys, lungs, skeletal muscles, and blood cells, etc.
LD (LDH) levels increase when cells in any of these organs are damaged for any reason.

Total Protein

(Reference Values: 6.6 ～ 7.9g/dL)

Total protein represents the total amount of protein in the blood. It can tell you about your health, nutritional status, and general condition.
Total protein comprises of albumin and proteins collectively known as globulins. An increase in total protein is often due to an increase in globulin, while a decrease in total protein is often due to a decrease in albumin.

Albumin

(Reference Values: 4.1 ～ 5.1g/dL)

Albumin is the most abundant protein found in the blood and is produced in the liver. The function of albumin is to keep water in the blood. Albumin levels decrease when there is a decline in liver function and leaks out of the body due to kidney disease, etc. or in the case of chronic inflammation or malnutrition.

A/G Ratio

(Reference Values: 1.32 ～ 2.23)

The A/G ratio represents the ratio of albumin (A) and globulin (G) which are proteins in the blood.
Most healthy people have a lot of albumin leading to an A/G ratio of 1 or higher, however, if a person's globulin level rises due to myeloma or chronic inflammation and exceeds their albumin level, the A/G ratio will be less than 1.

Kidney Function Tests 16

BUN (Urea Nitrogen)

(Reference Values: 20mg/dL and below)

Urea nitrogen is a waste product of protein metabolism. It is filtered out by your kidneys and excreted in your urine. When kidney function declines, it remains in the blood causing the level to rise. Dehydration and diseases that block the urinary tract also cause the level to rise. Since urea nitrogen is easily affected by eating and swelling, etc., a determination will be made by looking at other results too.

Creatinine

(Reference Values:
Males: 1.07mg/dL and below
Females: 0.79mg/dL and below)

Creatinine is a waste product produced from substances in the muscles that is filtered out by the kidneys and excreted in the urine. When kidney function declines, less creatinine is excreted causing the level to rise. Because creatinine is correlated with muscle mass and physical activity, men generally have higher levels than women.

eGFR

(Reference Values: 60.0 and above (mL/min/1.73㎡))

The eGFR level shows how well the glomeruli in the kidneys are able to filter out waste products. It can be used to more accurately assess renal function based on a person’s creatinine level, age, and gender. A condition in which a person’s kidney function continues to deteriorate over a long period of time is called chronic kidney disease (CKD). Not only is chronic kidney disease a precursor to kidney failure which requires dialysis, it is also one of the causes of cardiovascular diseases such as myocardial infarction and stroke. It is highly important to detect chronic kidney disease early on using eGFR.

17 Electrolytes Test

Electrolytes are minerals found in blood and other body fluids that conduct electricity when dissolved in water. Electrolytes play an essential role in maintaining life. (We get electrolytes from eating a balanced diet and the kidneys and hormones are primarily responsible for maintaining a constant balance and stable concentrations of electrolytes in the body.)
Sodium, potassium, and calcium play an important role in neurotransmission and muscle contraction. Chloride (chlorine) is mostly found together with sodium. It regulates the amount of water in the body and pH level.
Calcium and phosphorus are necessary for the formation of bones and teeth. Phosphorus is also essential for energy metabolism. Calcium and phosphorus concentrations are primarily regulated by the parathyroid hormone and activated vitamin D, etc.

Na (Sodium)
(Reference Values:
138 ～ 145mEq/mL)

K (Potassium)
(Reference Values:
3.6 ～ 4.6mEq/mL)

Cl (Chloride)
(Reference Values:
101 ～ 108mEq/mL)

Ca (Calcium)
(Reference Values:
8.8 ～ 10.1mg/dL)

P (Phosphorus)
(Reference Values:
2.7 ～ 4.6mg/dL)

18 Inflammation / Rheumatoid Factor / Infection

CRP
(C-Reactive Protein)
(Reference Values:
0.3mg/dL and below)

CRP is a type of protein that increases in the blood when there is inflammation due to bacterial or other infection or due to autoimmune diseases such as collagen diseases. It also increases when there is tissue damage due to trauma, surgery, or myocardial infarction, etc. Since CRP measures systemic inflammation, this test alone cannot be used to clearly identify which organ or area is inflamed.

RF
(Rheumatoid Factor)
(Reference Values:
15IU/mL and below)

RF is used to diagnose rheumatoid arthritis; however, RF is not only positive when a person has an autoimmune disease besides rheumatoid arthritis, it is also positive when a person has a variety of other diseases such as liver disease and infections. 5-25% of healthy individuals are said to be RF positive and a positive RF test does not necessarily indicate the presence of rheumatoid arthritis.

HCVAb
(Hepatitis C Virus Antibody)
(Reference: [−])

A positive (+) sign next to this item, indicates that you have previously been or currently are infected with hepatitis C.
This is only a screening test therefore if you test positive, you will need to check whether the hepatitis C virus is currently present in your body.

HBsAg
(Hepatitis B Surface Antigen)
(Reference: [−])

A positive (+) sign next to this item indicates that you are likely to currently be carrying the hepatitis B virus.
You will need to undergo further detailed testing for the hepatitis B virus.

HBsAb
(Hepatitis B Surface Antibody)
(Reference: [−])

A positive (+) sign next to this item indicates that you have previously been infected with hepatitis B and are now immune. People who have been vaccinated against hepatitis B will also come up positive (+).
If you have a positive (+) result, there is nothing for you to worry about.

Hepatitis Virus Tests

Hepatitis includes viral hepatitis, autoimmune hepatitis, drug-induced hepatitis, and alcoholic hepatitis. Of the viruses that cause hepatitis, type B and type C account for the majority of cases that lead to liver cancer. Hepatitis progresses from asymptomatic chronic hepatitis to liver cirrhosis and then to liver cancer. Early detection can prevent this disease from progressing to liver cancer and one important role that medical checkups play is in detecting the hepatitis virus before symptoms appear. Be sure to go in for a detailed examination for this virus if recommended to do so.

What is a hepatitis virus carrier?
A hepatitis carrier is someone who has the hepatitis virus present in their body.

What is chronic hepatitis?
Chronic hepatitis is inflammation of the liver that lasts at least 6 months.
It is not uncommon for acute hepatitis to progress to chronic hepatitis without there being any subjective symptoms.

Syphilis Test

Syphilis is determined using a combination of RPR and TP antibody.
A combination of RPR (+) TP antibody (-) is generally referred to as a biological false positive which is where the RPR reaction comes up positive despite the person not being infected with syphilis.
Even if your result is suggestive of a syphilis infection, your physician will make a comprehensive determination including on the time gap between when you were infected and when a syphilis reaction was detected so, please follow your physician's instructions.

What is syphilis?

Syphilis is a chronic systemic condition caused by infection with the bacterium syphilis spirochete.

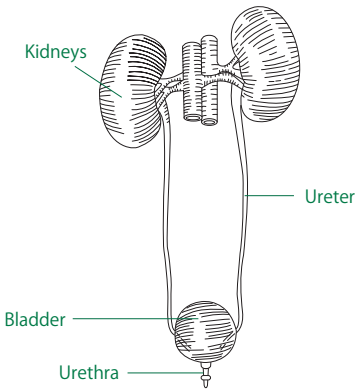
RPR
(Reference: [−])

TP Antibody
(Reference: [−])

Urinalysis 19

A urinalysis is an important test that tells you about the condition of your kidneys and bladder, etc.
Urine is produced in the kidneys and functions to eliminate waste products from the body and regulate internal conditions within the body.

Structure of the Urinary Tract (Kidneys, Ureters and Bladder)



Urine Specific Gravity

The kidneys maintain a consistent volume of water in the body by producing and then excreting either concentrated urine or diluted urine as required. If your kidneys are not functioning properly, they cannot regulate specific gravity. Even in healthy people, urine specific gravity is significantly affected by fluid intake, amount of physical activity, sweating, and the season.
1.026 and above… dehydration, diabetes, nephrotic syndrome
1.009 and below… kidney dysfunction, excessive fluid intake, use of diuretics, diabetes insipidus

pH
(Reference Values: 5.0 ～ 7.5)

A urine pH test measures acidity in the body. Urine is usually slightly acidic.
Food and medicines can cause the pH to alkalinize.

Protein in Urine
(Reference: [−])

Protein in urine tests are carried out for the early detection of chronic kidney disease (CKD). When your kidneys are damaged, protein from your blood leaks into your urine. A result of 1+ and above is considered to be positive. However, a person may temporarily test positive for protein in urine due to fever, physical activity, stress, or concentrated urine caused by dehydration, so protein in urine must be tested for again to confirm the result.
Protein in urine may be caused by kidney diseases such as nephritis or kidney damage resulting as part of a systemic disease such as high blood pressure, diabetes, or collagen diseases.
A high level of protein in urine not only increases the risk of renal failure (dialysis), it also increases the risk of the onset of myocardial infarction and strokes as well as death.

Glucose in Urine
(Reference: [−])

At present, screening for diabetes is carried out based on blood glucose and HbA1c irrespective of whether the glucose in urine test comes up positive or negative. (See 11 Glycometabolism Tests.) You may test positive for glucose in urine even though you do not have diabetes.

Urobilinogen
(Reference: [1.0 E.U./dL and below])

Urobilinogen is produced by the breakdown of bilirubin (a bile pigment). Even healthy people excrete some urobilinogen in their urine. A urobilinogen test is used to see whether there is any damage to the liver cells or whether there is too much bilirubin in the body.

Occult Blood in Urine
(Reference: [−])

Occult blood in urine tests are used to detect blood in the urine which is not visible with the naked eye. If there is bleeding anywhere in the urinary tract from the bladder to the urethra, blood will be mixed in with the urine and the test will be positive.
There are various causes of occult blood in the urine including urinary tract cancer, ureteral stones, inflammations such as cystitis, and internal kidney diseases.

WBC (Leukocytes in Urine)
(Reference: [−])

Inflammation of the urinary tract causes an increase in white blood cells in the urine. However, since it is normal for normal bacteria to be present at the opening of the urethra, how the urine sample is collected may result in the test reading positive.

20 Visual Acuity Test / Ocular Tonometry

Visual Acuity Test

(Reference Values:
0.7 and above aided or
corrected Ocular Tonometry)

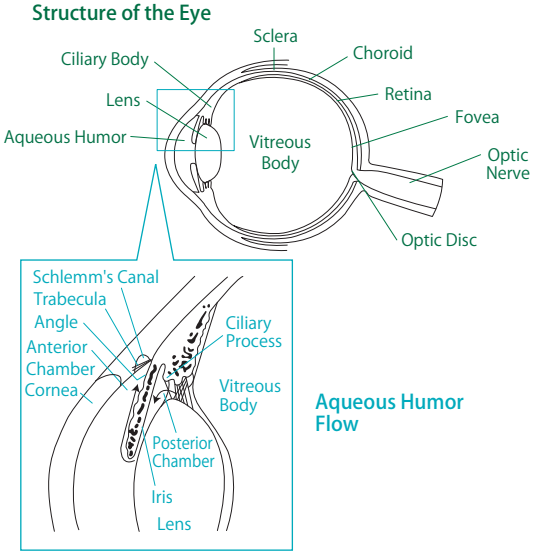
A visual acuity test is an eye exam that checks how well you see the break in the ring of the "C" mark (Landolt's ring) from a specific distance. The result is shown as a "naked vision value" (which is measured without glasses) or “corrected vision value’ (which is measured with glasses or contact lenses).

Ocular Tonometry

(Reference Values:
7 ～ 20mmHg)

An ocular tonometry test checks the pressure inside the eyes (intraocular pressure) using a pneumotonometer that blows air onto the surface of the eyes.
If your intraocular pressure is 21mmHg or greater, see an eye doctor (ophthalmologist) to rule out glaucoma. However, if your intraocular pressure is within the normal range, you might be suspected to have “normal tension glaucoma’ by the fundoscopy test.

Structure of the Eye



Aqueous Humor Flow

In general, seeing difficulty, such as blurred vision or impaired eyesight, or both, is caused by aging (especially after the age of 40) for everyone to some degree. However, sudden worsening of vision function might be reflection of a serious eye disease, and therefore a visit to the eye doctor is recommended.

Aqueous Humor Flow

There is a fluid called “aqueous humor” inside the eyeball which provides nutrients to the cornea and lens. This keeps the intraocular pressure constant. When there is an imbalance in the flow of aqueous humor, intraocular pressure increases.

21 Fundoscopy

Fundoscopy shows the general condition of the ‘fundus’ of the eye (back of the inside of the eye) that includes the retina, optic nerve, and the blood vessels (arteries and veins).
The blood vessels in the fundus are the only blood vessels that can be observed directory from outside the body. Therefore, some vascular damage caused by systemic diseases such as high blood pressure, arteriosclerosis, and diabetes can be evaluated by fundoscopic observation of retinal arteries. In addition, other eye diseases such as macular degeneration and normal tension glaucoma could be screened by fundoscopy.
If your result indicates some abnormal findings, please see an eye doctor (ophthalmologist) for further evaluation. However, if you have already been followed by your attending physician on your retinal finding, please consult the present result with your attending physician.
If your result is ‘indeterminable’, it means that proper photo of your fundus had not been obtained due to insufficient light entering the eye (which could be due to cataract), vitreous clouding, inadequate pupil dilation, or other factors. In this case, we also recommend you seeing an eye doctor.

22 Hearing Test

Hearing Test (Tone audiometry) is a test to measure your hearing sensitivity using two pure tone sounds in low frequency (1000Hz) and high frequency (4000 Hz).
If your result is ‘no significant abnormalities’, your hearing sensitivity is normal.
If your result indicates some abnormal findings, there may be a problem with your hearing sensitivity.
In general, our hearing sensitivity decreases with aging, especially in the higher frequency area. However, sudden decrease in hearing sensitivity might be reflection of acute-onset disorder in the ear or nose field even in the elderly, and thus a visit to the ENT (ear, nose, and throat) doctor is recommended.

Prostate Test 23

PSA
(Prostate-Specific Antigen)

(Reference Values:
4.0ng/mL and below)
***Measured for males only**

A prostate exam involves doing a blood test to measure PSA. PSA tests are effective in detecting prostate cancer early. The general PSA reference range is 4.0ng/mL and below. If your PSA level exceeds this, we recommend that you visit a specialist. An elevated PSA level may also be due to an enlarged prostate or inflammation.
Prostate cancer detected by PSA testing is less likely to become advanced or metastasize than cancer detected after symptoms appear.

Bone Density Test 24

Bone density tests are carried out for the early detection and prevention of osteoporosis which impacts a person's quality of life (QOL).
Bone density decreases with menopause and age. It also decreases due to treatment using steroid hormones, in post-gastrectomy patients, and due to hyperthyroidism or hyperparathyroidism. The onset of osteoporosis is generally thought to be greatly influenced by genetic factors as well as lifestyle habits (diet, exercise, smoking and alcohol, etc.). It is important that you take any advice regarding your lifestyle on board.
Bone density measurements vary depending on the area measured, measurement method, and type of test.
At our center, we use the most reliable DXA method, which uses low levels of x-ray, to measure bone density in the forearm.

Comparison with People of Same Age (Z-Score)

Your Z-score is determined on the basis that the mean bone density of those of the same age and same sex is 100. The score looks at how your actual measurements compare to those of other people of the same age.

Comparison with Young People (T-Score)

(Reference Values:
80 and above)

Your T-score is determined on the basis that the mean bone density of those in the age group with the highest bone density (20-44 years old) of the same sex is 100.
Results are shown using the T-score.

Gynecological Examinations 25

Cervical Cytology

The test is designed to detect dysplasia before it develops into cervical cancer or carcinoma. Cervical cytology will adopt Liquid Based Cytology (LBC) from April 2023 and will be described according to the Bethesda System Classification. Please check your results and general comments.

Assessment Classification	Result of Cervical Cytology
A：There are no abnormal findings.	NILM* (Negative for intraperitoneal lesion or malignancy)
D1：You should undergo a thorough examination at a medical institution.	ASC-US*, LSIL, ASC-H, HSIL, SCC, AGC**, AIS**, Adenocarcinoma**, Other malig.

ASC-US : Atypical squamous cells of undetermined significance
LSIL: Low grade squamous intraperitoneal lesion
ASC-H: Atypical squamous cells cannot exclude HSIL
HSIL: High grade squamous intraperitoneal lesion
SCC: Squamous cell carcinoma
AGC: Atypical glandular cells
AIS: Adenocarcinoma in situ
Other malig. : Other malignant neoplasms

*: The result of cervical cytology is determined based on past results and HPV tests. Therefore, we recommend a repeat cervical cancer screening one year later with "Assessment Classification: B2" in the General Comments column for both NILM and ASC-US.
**: We also recommend examination for uterine cancer.

Please note that the findings and results of the cervical cancer screening are different from the previous judgment as shown below. In addition, the overall comment column is not detailed, so please confirm the following information.

Assessment Classification	Detected findings	Management
A	Atrophic vaginitis	This is a finding that can be seen due to hormonal imbalance with age, menstrual cycle, and in patients undergoing treatment for illness. It is characterized by changes in physical condition and generally resolves spontaneously, but since many patients have no subjective symptoms, treatment is not necessary. However, if you have any symptoms such as increased discharge or irregular bleeding, please see your local gynecologist.
A	Candida vaginitis S/O	In addition to cervical cells, fungi have been detected. The main symptoms are itching and rash, and those with symptoms should see their local gynecologist.

Gynecological Inspection

We perform a visual examination to check the condition of the vulva, vagina, and cervix.
We also use palpation (bimanual examination of the vagina and abdomen) to check for any abnormalities in the gynecological area.
Although physical examinations may detect some lesions, they are not a substitute for diagnostic imaging such as gynecological ultrasounds or pelvic CTs/MRIs. If you experience any concerning symptoms such as irregular bleeding or lower abdominal pain, you should visit a gynecologist rather than just having a checkup. Please bear in mind that while we perform optional tests including high-risk HPV (Human Papillomavirus) tests and gynecological ultrasounds, we do not perform uterine cancer screening.

26 Medical Questionnaire

Here, we show the results you entered yourself.

III. Optional Tests

Multi-slice CT Scan of Chest / Sputum Cytology / CT Scan for Pulmonary Emphysema 1

Multi-slice CT Scan of Chest

CT scans take cross-sectional images (slices of the body) to collect a multitude of information about the intricate branches of the bronchi and blood vessels inside the lungs which enables us to get a 3D view of the organ. This scan can depict faint lesions that are difficult to detect in a chest X-ray image as well as lesions which overlap the heart or diaphragm. It may also reveal information on other organs falling within the area scanned.

Sputum Cytology

Sputum cytology checks for any abnormal or cancerous cells in the sputum.
It supplements the chest x-ray and chest CT scan. People aged 50 and above with a smoking index (average number of cigarettes smoked per day x number of years of smoking) of 600 or more are recommended to undergo a sputum cytology exam.
If there is an insufficient quantity of sputum in the sample, the result will be indeterminate.

CT Scan for Pulmonary Emphysema

A CT scan for pulmonary emphysema assesses the extent of emphysema using a multi-slice CT scan of the chest. The higher the emphysematous area compared to normal lung area, the higher the Goddard score. If you get a result of D1 moderate or D2 severe, we recommend that you visit a respiratory specialist, regardless of whether or not you are a smoker or have respiratory symptoms (such as shortness of breath on exertion, etc.).

Breast Examination 2

Given the increasing incidence of breast cancer among Japanese women, our center recommends imaging-based screening.
Our guide on diagnostic breast imaging, based on the features of the mammary glands, is as follows: Women over 50 years old: A “breast x-ray (mammography)” once a year. Women between 40 and 50 years old: A “breast ultrasound” and a “breast x-ray (mammography)” every other year. Women under 40 years old: A “breast ultrasound”.

The categories in the Results Table follow a five-grade scale from 1 to 5. The higher the number, the stronger the suspicion of malignancy. Be sure to check the Overall Results Table (A-D2) and the “General Comments” section. If you have had multiple breast examinations at our center, we will also compare the images and results of your previous breast examinations when we make our determination. If you have a breast x-ray (mammography) and a breast ultrasound on the same day, we will make a final determination based on a comprehensive assessment of both.

Helicobacter Pylori Antigen Stool Test 3

This test checks for infection of Helicobacter pylori (H. pylori), a bacterium which causes chronic gastritis and stomach cancer, in the stomach. Whether or not you have an infection is determined by detecting Helicobacter pylori antigens in the stool.
This test is known to be more accurate than the Helicobacter pylori antibody blood test, which is often used in municipal health checkups, however, in rare cases, the test may come up negative despite Helicobacter pylori being present.
A negative (-) result indicates that you are not infected. This suggests that you have never previously been infected or that even if you have been infected in the past, the bacteria have now been eradicated and are no longer present in the stomach. Since infection in adulthood is very rare, annual testing is not necessary.

A positive (+) result indicates that you are infected. When you get this result, we recommend that you visit a medical institution (GI doctor or gastroenterologist). If you did not have an endoscopy as part of the barium stomach x-ray course and will undergo Helicobacter pylori eradication therapy, you will need to have an endoscopy. Please consult with the medical institution where you will be treated.

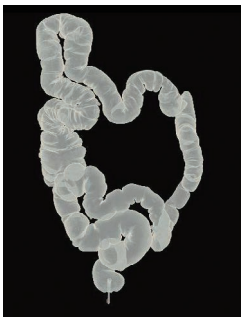
4 Colonoscopy

In a colonoscopy, after taking a laxative to clean out the colon, an endoscope is used to examine the condition of the mucous membranes of the rectum and colon. If necessary, a sample of a lesion (biopsy) may be taken for further examination. Be sure to go in for a secondary examination or get treatment if recommended to do so.

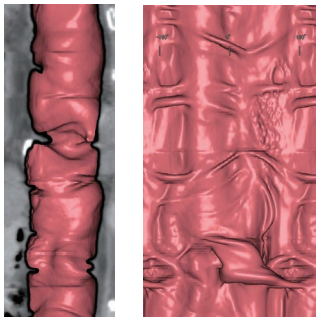
5 3D-CT Colonography

In a 3D-CT colonography, CT images of the abdomen are processed by a computer to create a three-dimensional image of the colon.

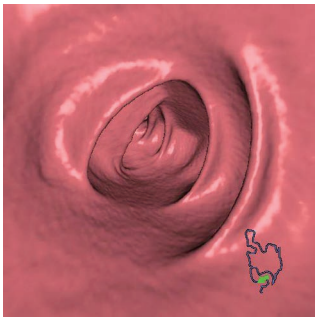
1. Air Contrast Barium Enema



2. Virtual Gross Pathology



3. Virtual Colonoscopy



The entire colon from the rectum to the cecum is checked for its length, degree of expansion, deformation or contraction of the wall, irregularities in the mucosa, and any protruding growths such as polyps. A specialist will then make a diagnosis based on the location, size, and shape of the lesion and determine whether further examination or treatment is required.

6 Visceral Fat CT

Visceral Fat Area

(Reference Values:
Below 100cm^2)

The area of visceral fat and subcutaneous fat is measured by taking an image of the site of the bladder using a CT device.

Normal CT Image

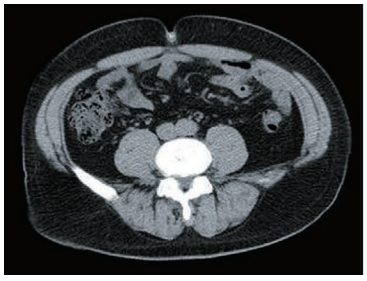
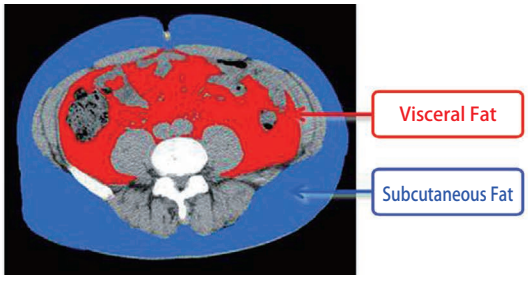


Image of Visceral Fat Area Measurement



Visceral fat is the fat found inside your abdominal muscles which surrounds your organs including your liver and kidneys. A visceral fat measurement of 100cm^2 or above is called “visceral fat obesity”.
High levels of visceral fat make you more susceptible to lifestyle diseases and can cause arteriosclerosis which can lead to myocardial infarction and cerebral infarction.
Overeating, lack of exercise and drinking alcohol increases visceral fat but you can reduce your visceral fat by making lifestyle changes.
[Note] The abdominal circumference shown in the test result will be different from the measurement taken in a standing position.

Heart Failure Screening 7

NT-proBNP

(Reference Values:
125pg/mL and below)

An NT-proBNP test is a blood test used to check your heart function (whether or not you have heart failure). NT-proBNP increases in cases of hypertensive heart disease, cardiomyopathy, valvular disease, and myocardial infarction. However, it also increases when renal function is impaired. If your NT-proBNP level is high, you will need to undergo further testing.

Ferritin Test 8

Ferritin

(Reference Values:
25 ～ 250ng/mL)

Ferritin is a protein that stores iron and regulates the concentration of iron in the blood. Measuring ferritin can help predict whether your body is iron deficient (latent iron deficiency). Even if you do not have anemia, you may still experience symptoms such as general fatigue simply due to a lack of iron in your body. Using iron to treat this is known to improve symptoms. It has been reported that approximately half of Japanese women have iron deficiency anemia or latent iron deficiency.

Normal ferritin values vary depending on the facility. Our center uses the reference values set by the Japanese Society of Hematology because the normal ferritin values for Japanese women who are prone to anemia tend to be low which means that their iron deficiency conditions may be overlooked. If your result is abnormally high, you may have a blood disorder, a malignant disease, or a collagen disease. We, therefore, recommend that you see a doctor to be sure.

Gynecological Ultrasound 9

A gynecological ultrasound checks for lesions in the cervix, uterine body (endometrium), and ovaries, etc.

Even if there are no abnormal findings in your test results at the time of the ultrasound, if you later experience abdominal bloating, irregular bleeding, or other symptoms, you should see a gynecologist as it could be that there has been a change in an existing condition or a new lesion has developed.

HPV (Human Papillomavirus) Test 10

HPV
(Human Papillomavirus)

Simple HPV (Human Papillomavirus) Genotyping

This test checks whether or not you are infected with any HPV viruses that cause cervical cancer.

Results are shown for each simple HPV genotype.

Genotype: Type 16, Type 18, Type 45, Type 51, Type 52

Grouping: Type 33/58, Type 35/39/68, Type 56/59/66

HPV Test Results

Result A: Negative

This result is given when HPV was not detected for any of the above genotypes and groups. Even if at this time, no HPV is detected in the test, it may be detected in the future due to a reinfection, a weakened immune system, or other physical conditions. Even if you test negative, we recommend that you retest every few years based on your immunity.

Result B2: Positive

You will be given a detailed breakdown of each result. Even if HPV is detected, the virus itself does not need to be treated. We recommend that you have an HPV test after one year to check that the virus is less active and no longer detected. A comprehensive determination will be made based also on the cervical cytology results so be sure to check the “General Comments” section.

11 Anti-CCP Antibody Test

Anti-CCP Antibody Test

(Reference Values:
Below 0.6U/mL)

An anti-CCP antibody test is a highly accurate test used to detect rheumatoid arthritis using blood. Anti-CCP antibody tests are significantly more accurate than the conventional rheumatoid factor tests. Reports indicate that many people will already test positive for this antibody four to five years before the onset of rheumatoid arthritis and that if a person tests positive, one out of three will go on to develop rheumatoid arthritis within a few years even if they are asymptomatic at the time tested.

12 Antinuclear Antibody Test

Antinuclear Antibody Test

(Reference Values:
Below 1:40)

An antinuclear antibody test is used to detect collagen diseases using blood. Collagen diseases are autoimmune diseases in which the body's own immune system attacks the organs. Antinuclear antibodies are antibodies which are directed against the nuclei of one's own cells and are typically present in tests carried out on people with a suspected collagen disease, in particular, systemic lupus erythematosus (SLE), scleroderma (systemic sclerosis), and Sjögren's syndrome. If you test positive particularly with a value of 1:160 or above, we recommend that you undergo further examination with a specialist.

13 Carotid Ultrasound

A carotid ultrasound is able to project images of the thickening of the vascular walls and the narrowing of the lumen caused by arteriosclerosis.

Arterial Wall Thickness

The thickness of the vascular wall is measured at several points and the thickness at the thickest point is recorded. While the arterial wall does thicken with age, if it exceeds 1.1 mm, it is considered to be a sign of arteriosclerosis.

Presence of Plaque

Localized protrusions formed when cholesterol and other substances accumulate on the vessel wall is called plaque.

Percent Stenosis

(0% no stenosis ~ 100%
complete occlusion)

In the case of vascular lumen narrowing, we measure the extent of the narrowing (in the case of very mild arteriosclerotic changes with almost no narrowing, we may not take a measurement).
There is no uniform standard for determining the severity of carotid artery stenosis in an ultrasound examination. The degree of stenosis determined by an angiography is generally classified as follows: Mild: 30%～49%, Moderate: 50%～69%, Severe: 70% and above. Please use this as a reference. At our facility, cases where the degree of stenosis is 50% or higher are determined to require further examination.
Results
Grade D: Based on the percent stenosis and nature of the plaque, it would be advisable to consult with a specialist regarding further examination and a future course of action.
Grade B2: Arteriosclerosis is observed but can be managed by controlling risk factors and monitoring the progression (This includes in the case of age-related changes in older people.)
*Although outside the scope of the ultrasound, if by chance, an abnormality is detected in the organs around the carotid artery (such as a thyroid tumor) and further examination is advisable, we will inform you by giving you a result of Grade D.

Exam of the Arterial Pulse 14

Ankle-Brachial Index (Blocked Blood Vessels)

ABI
(ankle-brachial pressure index)

(Reference Values:
1.00 and above but up to 1.40)

The index of blood vessel blockage (ABI value) is calculated by comparing the blood pressure in the lower leg with the blood pressure in the upper arm and used to estimate the degree of arterial stenosis or occlusion. An index of 0.9 or lower indicates arterial stenosis or occlusion in the lower limbs. An index of 1.41 or higher indicates severe calcification of the arteries.

Upper Arm - Brachial-Ankle Pulse Wave Velocity (Vascular Stiffness)

baPWV
(brachial-ankle pulse wave velocity)

Brachial-ankle pulse wave velocity assesses arterial stiffness based on the speed at which aortic vibrations (pulse waves) generated by the beating of the heart are transmitted to the peripheral blood vessels. The stiffer the vascular walls, the faster the pulse waves travel which may be an indication of arteriosclerosis. The reference values for baPWV are based on age and baPWV becomes quicker with age.
Please note that the accuracy of pulse wave testing (pulse wave velocity baPWV) in the case of people with an abnormal ankle-brachial index (ABI) may be reduced.

What is arteriosclerosis?

Arteriosclerosis is a condition in which not only do the arterial walls harden due to aging, but also fatty deposits and other substances stick to the inside of the blood vessels resulting in poor blood circulation and higher susceptibility to blood clotting.
Age is a major risk factor for arteriosclerosis and the prevalence of the disease increases with age. Other risk factors include dyslipidemia (high LDL cholesterol, high triglycerides, low HDL cholesterol), high blood pressure, impaired glucose tolerance (diabetes), hyperuricemia, smoking, obesity, lack of exercise, and family history.
If you are found to have arteriosclerosis, not only should you quit smoking, moderate your alcohol consumption, exercise, and diet, you should also get treatment for any risk factors for arteriosclerosis you have such as high blood pressure, dyslipidemia, diabetes, and hyperuricemia. We recommend that you find a “family doctor” who practices internal medicine. You should report the results to your attending physician if you have one.

InBody (Body Composition Analysis) 15

An InBody test provides measurements for body fat mass and muscle mass in each body segment (both arms, the trunk, and both legs) and water content. Reference values are shown based on gender and ideal body weight and results can be compared with these reference values. Measurements show whether you have swelling and also show your basal metabolic rate based on your muscle mass. Having yourself measured every year allows you to see how your body composition has changed over time.

Vasculitis Tests 16

Vasculitis tests are used to detect vasculitis using blood. ANCA (Antineutrophil cytoplasmic antibody)-associated vasculitis is an intractable disease that attacks blood vessels which although, as yet, not common in Japan, has seen a significant increase in recent years. It encompasses three conditions; microscopic polyangiitis (the most common type in the Japanese population), granulomatous polyangiitis (a type that is uncommon in the Japanese population), and eosinophilic granulomatous polyangiitis. ANCAs are used to detect these diseases in the blood. In the case of ANCA-associated vasculitis, this test is reported to give a positive result before symptoms even appear.
Measurements of two types of ANCA (PR3 and MPO) are taken and if either one comes up positive, we recommend that you undergo further examination. PR3-ANCA is said to be high specifically in people with Wegener's granulomatosis, while MPO-ANCA despite having a low specificity, is said to be high in people with necrotizing vasculitis and other vasculitis-based diseases (such as microscopic polyarteritis).
Early detection and early treatment of this disease is very important. If this test comes up positive, we recommend that you see a vasculitis specialist and undergo further examination. Even if your result is negative, the test positivity rate may gradually increase. If you have any concerns, we recommend that you have regular checkups.

Medical Checkup Q&A

Below are some questions frequently asked by our visitors.

Q1 I was instructed to go for secondary examination despite having no symptoms. Is it ok if I don't go?

A1 The purpose of this medical checkup is to detect and treat illnesses early on, so we would absolutely encourage you to go for a secondary examination. Medical checkups play an important role in the early detection of diseases when there are still no subjective symptoms. That's why having a secondary examination is so important.

Q2 I have been feeling strange lately. But the results of the medical checkup I had a month ago showed no abnormalities at all. Should I just carry on as I am?

A2 Only a limited number of tests are performed during a medical checkup. Some diseases cannot be detected by the tests carried out in the checkup.
If you are experiencing any subjective symptoms, you should see a specialist in addition to having a medical checkup.

Q3 There seem to be two types of stomach examinations; the barium swallow test and the endoscopy. What's the difference?

A3 There are advantages and disadvantages to each type. An upper gastrointestinal endoscopy is better for getting a direct and in-detail view of any changes in the gastric mucosa. An upper gastrointestinal x-ray (barium), on the other hand, is better for obtaining an overall image of the upper gastrointestinal tract. It should be noted however, that although only in extremely few cases, sedative-related accidents have occurred when performing upper gastrointestinal endoscopies and patients have experienced significant pain as a result of the procedure.

Q4 It's been several years since I started menopause. Can I stop going to the gynecologist and having breast exams?

A4 Even after menopause, as long as you still have female organs, you can still develop gynecological diseases including those of the uterus and ovaries. We recommend that you have an annual checkup.

Q5 Do you do any tests to look for tumor markers?

A5 We perform PSA tests for males which look for tumor markers of prostate cancer.
Tests carried out for other markers, while useful for monitoring the progression of diseases caused by tumors or for people at risk of developing certain tumors, are not useful in the early detection of tumors in the general public. For this reason, we do not carry out tests for tumor markers other than the PSA test.

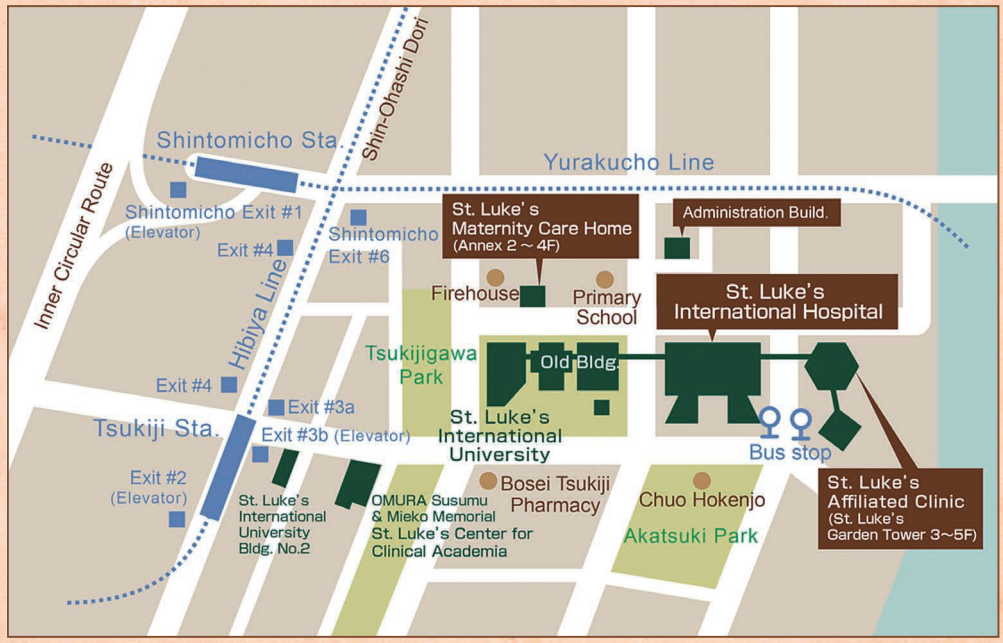
Q6 How often should I have a medical checkup?

A6 If you are over 40 years old, we recommend that you have an annual checkup. If you experience any subjective symptoms, you should visit a medical institution immediately without waiting to have a checkup.

Q7 I hear a lot about metabolic syndrome, but what exactly is it?

A7 Metabolic syndrome is a concept (syndrome) that encompasses visceral obesity (checked by abdominal circumference), high blood pressure, abnormal glucose metabolism, dyslipidemia, and other conditions considered to be risk factors for stroke and cardiovascular disease which are tested for in a checkup. Even if each risk factor individually only poses a minor risk, the risk increases exponentially when multiple risk factors are combined. However, with proper diet and exercise, you can expect to see significant improvement of these conditions. If you qualify, please take advantage of our consultations and lifestyle guidance.

As of August 2022



Subway

Tsukiji Station (Tokyo Metro Hibiya Line) (Exit 3a, 3b, 4), 7-minute walk
Shintomicho Station (Tokyo Metro Yurakucho Line) (Exit 6), 8-minute walk

Bus

T15 Saint Luke's Hospital Station (Fukagawa-Shako Line)
from Tokyo Station Yaesu Exit

St. Luke's International Hospital Affiliated Clinic, Center for Preventive Medicine

St. Luke's Tower 3F / 4F / 5F, 8-1 Akashi-cho, Chuo-ku, Tokyo 104-6591

TEL: 03-5550-2400

Mon - Sat 8:30 - 16:30 (excluding Sundays and public holidays)

Email: dock@luke.ac.jp https://dock.luke.ac.jp/