

### **Case 10 (Non-obese persons)**

In this medical examination, your test results for indicators of diabetes were normal.

You should continue to undergo regular medical checkups to monitor your health condition.

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\*Source: “Evidence-based Practice Guideline for the Treatment of Diabetes in Japan 2010 (in Japanese only),” and “Treatment Guide for Diabetes 2012-2013 (in Japanese)”.

It was ensured that the recommendations conformed to the recommended level of health guidance and medical treatment of the specific health guidance service.

## **Example expressions to advise people to stop smoking**

\* Please use a combination of the messages listed in the following two sections.

### **1. Messages to emphasize the importance of quitting smoking**

#### **Case 1 Persons with increased blood pressure**

Smoking and hypertension are the two leading causes of death among the Japanese. People who smoke and who have hypertension have a four-fold greater risk of dying from a stroke or heart disease as compared with those who do not have hypertension and a smoking habit. Considering your medical checkup results, it is recommended that you should stop smoking.

#### **Case 2 Persons with hyperlipidemia**

Smoking decreases the level of good cholesterol (high-density lipoprotein, HDL) and increases the levels of neutral fat (triglycerides) and bad cholesterol (low-density lipoprotein, LDL) in the blood. A combination of smoking and hyperlipidemia aggravates arteriosclerosis and increases the likelihood of a cerebral or myocardial infarction. Considering your medical checkup results, it is recommended that you should stop smoking.

#### **Case 3 Persons with hyperglycemia**

Smoking increases blood glucose levels, and increases the likelihood of diabetes by about 1.4 times. This is the result of the increase in sympathetic tone caused by smoking, which results in an increase in blood glucose. Moreover, smoking impairs the effectiveness of insulin, a hormone secreted by the pancreas. Furthermore, a combination of smoking and diabetes aggravates arteriosclerosis and increases the risk of dying from a cerebral or myocardial infarction by about 1.5–3 times (as compared to the risk of those who do not smoke). In addition, renal function is more likely to be impaired. Considering your medical checkup results, it is recommended that you should stop smoking.

#### **Case 4 Persons with the metabolic syndrome**

Smoking decreases the level of good cholesterol (high-density lipoprotein, HDL) in the blood and increases the level of neutral fat (triglycerides) and glucose. These conditions accelerate the development of metabolic syndrome. A combination of smoking and metabolic syndrome aggravates arteriosclerosis and increases the likelihood of a cerebral or myocardial infarction by about 4–5 times (as compared to the risk of those without metabolic syndrome and a smoking habit). Considering your medical checkup results, it is recommended that you should stop smoking.

#### **Case 5 Persons without the above abnormalities**

In this medical checkup, your blood pressure, lipid levels, and blood glucose were all within the normal limits. However, if you continue to smoke, you may be at higher risk of developing certain cancers, including lung cancer, and other conditions such as cerebral or myocardial infarction, diabetes, and chronic obstructive pulmonary disease (COPD), and subsequently, you will not be able to maintain the present satisfactory conditions. Considering your medical checkup results, it is recommended that you should stop smoking.

## **2. Recommending effective ways to quit smoking**

### **Case 1 Persons who intend to stop smoking immediately (within one month), or those who are motivated to stop smoking after hearing the above messages**

You can stop smoking by yourself but visiting a smoking cessation clinic or using smoking cessation aids will help you stop smoking relatively easily, and you will not have to worry about nicotine withdrawal symptoms. These antismoking strategies are 3–4 times more successful than the unaided strategy. If your antismoking therapy is covered by health insurance, you can receive the therapy at a hospital, at a monthly cost as low as one-third or half of the money you may spend on cigarettes (if you smoke 20 cigarettes a day).

### **Case 2 Persons who do not intend to stop smoking**

While you currently do not plan to stop smoking, you may be motivated to do so in the future. When you do, you should remember the following advice.

You can stop smoking by yourself, but visiting a smoking cessation clinic or using smoking cessation aids will help you stop smoking relatively easily. These antismoking strategies are 3–4 times more successful than the unaided strategy. If your antismoking therapy is covered by health insurance, you can receive the therapy at a hospital, at a monthly cost as low as one-third or half of the money you may spend on cigarettes (if you smoke 20 cigarettes a day).

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## Example expressions to notify findings related to urine protein

\*Use these expressions for people without serum creatinine measurements

### [Classification of medical checkup results and advice]

Medical checkup results		Advice
Abnormal ↑	Urine protein: positive (1+/2+/3+)	1) Seek medical attention promptly.
	Urine protein: slightly positive (±)	2) Visit a hospital for reexamination of the urine.
↓ Normal	Urine protein: negative (-)	3) Receive regular medical checkups.

What does “chronic kidney disease (CKD)” mean?

CKD is a pathological condition in which a positive result from the urine protein test or deterioration in renal function [glomerular filtration rate (GFR) < 60 ml/min/1.73 m<sup>2</sup>] continues for more than 3 months.

### [Example expressions to explain the results to the concerned persons]

#### **Case 1 Urine protein (≥ 1+): positive test**

According to the medical checkup results, you are strongly suspected of having advanced chronic kidney disease (CKD). Please visit a hospital promptly.

As compared to persons without CKD, those with CKD have a 10-fold greater risk of progressing to terminal renal failure, which requires dialysis therapy. In addition, their risk of stroke/cardiovascular diseases, including angina pectoris and myocardial infarction, and of dying from these diseases is more than twice that of persons without CKD. These risks, however, can be reduced by appropriate treatment; therefore, early initiation of treatment is recommended.

#### **Case 2 Urine protein (±): slightly positive test**

According to the medical checkup results, the possibility that you may have chronic kidney disease (CKD) cannot be ruled out. You should have your urine reexamined. If the reexamination reveals a “positive (+) test for protein,” you need to receive treatment immediately. As a precaution, please go to a hospital for reexamination of the urine.

As compared to persons without CKD, those with CKD have a 10-fold greater risk of progressing to terminal renal failure, which requires dialysis therapy. In addition, their risk of stroke/cardiovascular diseases, including angina pectoris and myocardial infarction, and of dying from these diseases is more than twice that of persons without CKD. These risks can be reduced by appropriate treatment; therefore, getting early

treatment is of great importance.

### **Case 3 Urine protein (-): negative test**

According to the medical checkup results, your renal function seems to be normal.

You should continue to undergo regular medical checkups to monitor your health condition.

If you meet any of the conditions mentioned below (\*), you may be predisposed to developing CKD. As compared to persons without CKD, those with CKD have a 10-fold greater risk of progressing to terminal renal failure, which requires dialysis therapy. In addition, their risk of stroke/cardiovascular diseases, including angina pectoris and myocardial infarction, and of dying from these diseases is more than twice that of persons without CKD

To reduce your risk of developing CKD, you should improve your dietary habits and manage your obesity, if applicable. Persons with hypertension should reduce salt intake. Smoking cessation is also important.

(\*) Risk factors for CKD:

Obesity, metabolic syndrome, hypertension, diabetes, hyperlipidemia, hyperuricemia (under treatment or requiring treatment), family history of CKD, abnormal findings in past urinalysis, and old age ( $\geq 65$  years).

## Example expressions to notify the findings related to urine protein and serum creatinine

\*Use these expressions for people with serum creatinine measurements

### [Classification of medical checkup results and advice]

Medical checkup results (Unit for eGFR: ml/min/1.73 m <sup>2</sup> )		Urine protein (-)	Urine protein (±)	Urine protein ≥ 1+
Abnormal ↑ ↓ Normal	eGFR < 50	1) Seek prompt medical attention.		
	eGFR 50–59	3) Improve your lifestyle.	2) Visit a hospital for reexamination of the urine.	
eGFR ≥ 60	4) Undergo regular medical checkups.			

What does “chronic kidney disease (CKD)” mean?

CKD is a pathological condition in which a positive result on the urine protein test or deterioration in renal function [glomerular filtration rate (GFR) < 60 ml/min/1.73 m<sup>2</sup>] continues for more than 3 months.

How is renal function [glomerular filtration rate (GFR)] assessed?

The GFR estimation (eGFR) is based on serum creatinine, age, and sex.

Normal eGFR is about 100 ml/min/1.73 m<sup>2</sup>.

### [Example expressions to explain the results to the concerned persons]

#### **Case 1 [Urine protein (+) or eGFR < 50]**

According to the medical checkup results, you are strongly suspected of having advanced chronic kidney disease (CKD). Please visit a hospital promptly.

As compared to persons without CKD, those with CKD have a 10-fold greater risk of progressing to terminal renal failure, which requires dialysis therapy. In addition, their risk of stroke/cardiovascular diseases, including angina pectoris and myocardial infarction, and of dying from these diseases is more than twice that of persons without CKD. These risks, however, can be reduced by appropriate treatment; therefore, early initiation of treatment is recommended.

#### **Case 2 [eGFR ≤ 50 and urine protein (±)]**

According to the medical checkup results, the possibility that you may have chronic kidney disease (CKD)

cannot be ruled out. You should have your urine reexamined. If the reexamination reveals a “positive (+) test for protein,” you need to receive immediate treatment. As a precaution, please visit a hospital for a urine reexamination.

As compared to persons without CKD, those with CKD have 10-fold greater risk of progressing to terminal renal failure, which requires dialysis therapy. In addition, their risk of stroke/cardiovascular diseases, including angina pectoris and myocardial infarction, and of dying from these diseases is more than twice that of persons without CKD. These risks, however, can be reduced by appropriate treatment; therefore, receiving early treatment is of great importance.

### **Case 3 [eGFR 50–59 and urine protein (-)]**

According to the medical checkup results, you are strongly suspected of having chronic kidney disease (CKD). As compared to persons without CKD, those with CKD are more likely to suffer from terminal renal failure and require dialysis therapy. In addition, they are at a higher risk of developing stroke/cardiovascular diseases, including angina pectoris and myocardial infarction, and of dying from these diseases.

The results of your urinalysis indicate no urgent hazardous condition, but further aggravation of CKD must be prevented. Therefore, you should make an effort to improve your dietary habits and manage your obesity, if applicable. If you suffer from hypertension, make an effort to limit your salt intake. Smoking cessation is also important.

To confirm if your lifestyle improvements are leading to desirable results, you should undergo regular medical checkups.

Note: If you are younger than 40 years, these data suggest that your renal function is inferior to the renal function of most people of the same age. Therefore, you should seek appropriate medical attention. In this case, you are likely to develop chronic kidney disease .

### **Case 4 [eGFR $\geq$ 60 and urine protein (-)]**

The medical checkup results indicate that you are not very likely to have chronic kidney disease (CKD).

However, you should continue to undergo regular medical checkups to monitor your health condition.

However, if you meet any of the conditions shown below (\*), you may be predisposed to developing CKD.

To prevent this, you should improve your dietary habits and manage your obesity, if applicable. Persons with hypertension need to reduce their salt intake. Smoking cessation is also important.

(\*) Risk factors for CKD:

Obesity, metabolic syndrome, hypertension, diabetes, hyperlipidemia, hyperuricemia (under treatment or requiring treatment), family history of CKD, abnormal findings in a past urinalysis, and old age ( $\geq$  65 years).



**[Reference] Risk levels corresponding to the numerical data as compared to the persons without CKD**  
(Unit for eGFR: ml/min/1.73 m<sup>2</sup>)

Risk of requiring dialysis therapy due to terminal renal failure	Urine protein		
	(-)-(±)	(+)	(2+)-(3+)
eGFR < 50	50-1,000 times	300 times	2,000 times
eGFR 50-59		50 times	150 times
eGFR ≥ 60		10 times	20 times

Risks for developing cardiovascular diseases and of dying from them	Urine protein		
	(-)-(±)	(+)	(2+)-(3+)
eGFR < 50	3-8 times	3 times	8 times
eGFR 50-59		3 times	4 times
eGFR ≥ 60		2 times	3 times

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## Example expressions to notify the findings related to uric acid

\*Use these expressions for people with uric acid measurements

Note: These example expressions have been prepared on the assumption that the persons do not complain of any common symptoms such as lower limb joint pain in gouty arthritis.

If the persons complain of any pain, advise them to visit a hospital for appropriate treatment.

### [Classification of medical checkup results and advice]

Medical checkup results (Unit: mg/dL)		Advice
Abnormal ↑	Serum uric acid $\geq 8.0$	1) First, try to improve your lifestyle. If your serum uric acid does not improve with these lifestyle changes, you should seek medical attention.
	Serum uric acid 7.1–7.9	2) You should improve your lifestyle.
Normal ↓ Abnormal	Serum uric acid 1.5–7.0	3) You should continue to undergo regular medical checkups.
	Serum uric acid $< 1.5$	4) You should seek medical attention.

### [Example expressions to explain the results to the concerned persons]

#### **Case 1 (Serum uric acid $\geq 8.0$ mg/dL)**

The results of this medical checkup indicate that you suffer from hyperuricemia. If you leave it untreated, you may develop gouty arthritis (also called “gout”) and experience strong lower limb joint pain. In addition, a high level of serum uric acid increases the risk of developing renal disorder, urinary lithiasis, and metabolic syndrome.

First, you should improve your lifestyle and resolve your obesity. For example, you can improve your dietary habits by decreasing your intake of sugar. In addition, you need to exercise regularly to increase your activity level. Sufficient intake of water is also important. Because alcoholic beverages increase serum uric acid level, irrespective of whether they contain purines, you should limit your consumption of any kinds of alcoholic beverages.

You should make an effort to improve your lifestyle. Then, you should continue to undergo regular medical checkups to monitor your health condition. However, it may be that even after implementing lifestyle improvements, your serum uric acid level may exceed 9.0 mg/dl. In such a situation, you are advised to receive drug therapy. You should visit a hospital and show the results of this medical checkup to your physician.

### **Case 2 (Uric acid 7.1–7.9 mg/dL)**

This medical checkup result indicates that you suffer hyperuricemia. Your test results indicate that you are not at an immediate risk of developing gouty arthritis (also called “gout”). However, in the future, you may develop this condition, which is often accompanied by strong lower limb joint pain. In addition, high levels of serum uric acid increase the risk of developing renal disorder, urinary lithiasis, and metabolic syndrome.

First, you should improve your lifestyle and resolve your obesity. For example, you can improve your dietary habits by decreasing your intake of sugar. You should also exercise regularly to increase your activity level. Sufficient intake of water is also important. Because alcoholic beverages increase serum uric acid level, irrespective of whether they contain purines, you should limit your consumption of any kinds of alcoholic beverages.

You should continue to undergo regular medical checkups to monitor your health condition.

### **Case 3 (Uric acid 1.5–7.0 mg/dL)**

The results of this medical checkup indicate that your serum uric acid is within the normal limits.

You should continue to undergo regular medical checkups to monitor your health condition.

### **Case 4 (Uric acid < 1.5 mg/dL)**

This medical checkup result indicates that your serum uric acid is extremely low.

If you are receiving drug treatment for some disease, the dose may need to be adjusted. You should see your primary care doctor and show the results of this medical checkup.

If you are not currently receiving any drug treatment, the uric acid excretion from your kidney may be excessive. If left untreated, this may result in acute renal failure or urinary lithiasis. You should visit a hospital and show the results of this medical checkup to your doctor to undergo a complete medical checkup.

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[References: Serum uric acid levels and treatment plans]

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