

**Supplementary information for:**

Prevalence of metabolic syndrome in patients with type 2 diabetes in Japan: a retrospective cross-sectional study

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**Table S1. Variables and definitions**

Variable	Definition
Demographics	Age (on the date of health check-up) and sex
Body mass index	Body mass index (kg/m <sup>2</sup> )
Central obesity indicator	Waist circumference (cm)
Vitals and laboratory tests	Systolic blood pressure, diastolic blood pressure (mmHg) Lipid profile: triglyceride, high-density lipoprotein, low-density lipoprotein (mg/dL) Fasting blood sugar (mg/dL) HbA1c % (NGSP)
Comorbidities	Presence of confirmed diagnosis codes below during the health check-up year (January-December): Congestive heart failure (ICD-10: I50) Stroke (ischemic and hemorrhagic) (ICD-10: I60-63) Chronic kidney disease (ICD-10: N18 and/or GFR <60 ml/min/1.73 m <sup>2</sup> ) Myocardial infarction (ICD-10: I21, I22) Atrial fibrillation (ICD-10: I48.0-I48.2, I48.9)
Cardiovascular medications	Use of the drugs below during the health check-up year (January-December): Lipid-lowering drugs (ATC code: C10) Antihypertensive drugs (ATC code: C02-04, C07, C08) Aspirin (ATC code: B01AC06)

ATC, Anatomical Therapeutic Chemical; GFR, glomerular filtration rate; HbA1c, glycated hemoglobin; ICD-10, International Classification of Diseases-10<sup>th</sup> revision; JMDC, Japanese Medical Database Company; NGSP, National Glycohemoglobin Standardization Program.

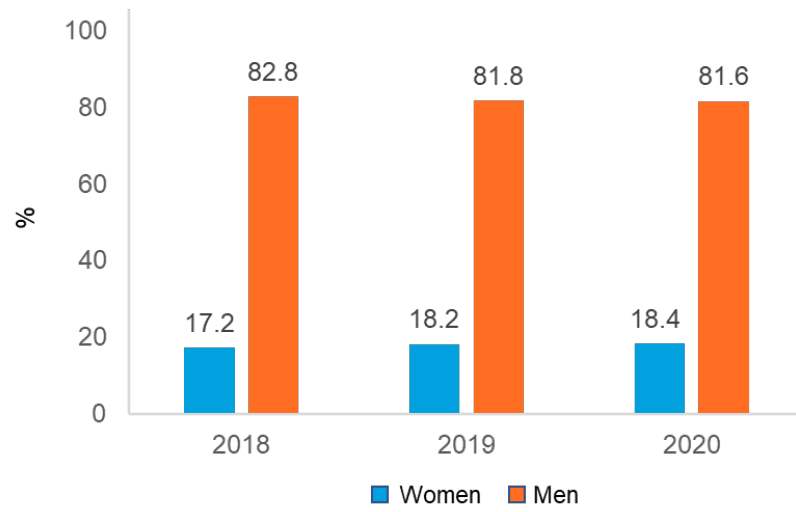
**Table S2. Demographics of the study cohort by year**

	<b>No MetS</b>	<b>MetS</b>
<b>Study cohort, N</b>		
2018	80,890	58,125
2019	90,302	64,237
2020	88,806	66,847
<b>Sex, no. (%)</b>		
<b>2018</b>		
Men	63,075 (78.0)	52,058 (89.6)
Women	17,815 (22.0)	6,067 (10.4)
<b>2019</b>		
Men	69,358 (76.8)	57,088 (88.9)
Women	20,944 (23.2)	7,149 (11.1)
<b>2020</b>		
Men	67,868 (76.4)	59,124 (88.4)
Women	20,938 (23.6)	7,723 (11.6)
<b>Age, years</b>		
2018	55.2 (8.4)	53.6 (8.1)
2019	55.3 (8.6)	53.8 (8.2)
2020	55.2 (8.7)	53.8 (8.3)
<b>Body mass index, kg/m<sup>2</sup></b>		
2018	25.1 (4.4)	29.0 (4.4)
2019	25.2 (4.4)	29.0 (4.4)
2020	25.2 (4.5)	29.1 (4.5)
<b>Waist circumference, cm</b>		
2018	87.5 (11.0)	97.9 (9.8)
2019	87.7 (11.1)	98.1 (9.9)
2020	87.9 (11.2)	98.3 (10.0)
<b>Systolic blood pressure, mmHg</b>		

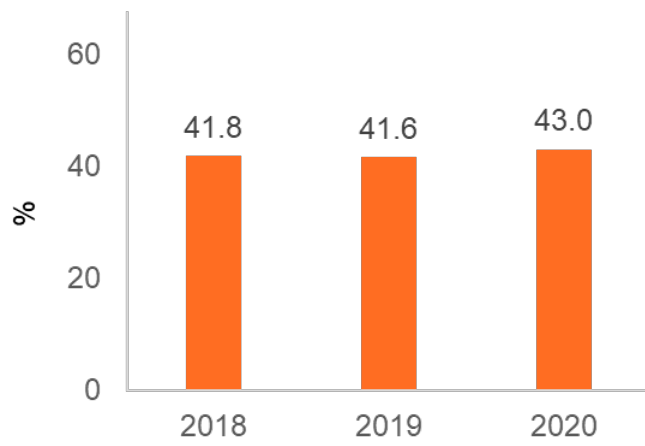
2018	124.1 (15.2)	135.5 (15.1)
2019	123.8 (15.2)	135.5 (15.3)
2020	124.4 (15.3)	135.9 (15.2)
<b>Diastolic blood pressure, mmHg</b>		
2018	76.0 (10.1)	84.2 (10.3)
2019	75.9 (10.0)	84.3 (10.4)
2020	76.3 (10.0)	84.4 (10.3)
<b>Triglycerides, mg/dL</b>		
2018	118.9 (89.3)	199.3 (149.6)
2019	117.6 (88.1)	197.9 (150.3)
2020	117.8 (86.8)	197.9 (148.4)
<b>HDL-C, mg/dL</b>		
2018	58.3 (15.5)	49.7 (12.2)
2019	58.9 (15.6)	50.2 (12.3)
2020	59.1 (15.7)	50.4 (12.4)
<b>LDL-C, mg/dL</b>		
2018	114.7 (30.1)	120.3 (31.5)
2019	114.2 (30.0)	120.4 (31.8)
2020	113.5 (30.2)	120.1 (31.9)
<b>Fasting blood glucose, mg/dL</b>		
2018	130.8 (37.7)	148.3 (40.1)
2019	130.8 (37.6)	148.6 (40.4)
2020	130.7 (37.9)	150.0 (41.8)
<b>HbA1c (%)</b>		
2018	7.0 (1.2)	7.4 (1.3)
2019	7.0 (1.2)	7.4 (1.3)
2020	7.0 (1.2)	7.5 (1.4)

Mean (standard deviation) shown unless otherwise indicated.

HbA1c, glycated hemoglobin; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein cholesterol; MetS, patients with metabolic syndrome; No MetS, patients without metabolic syndrome.

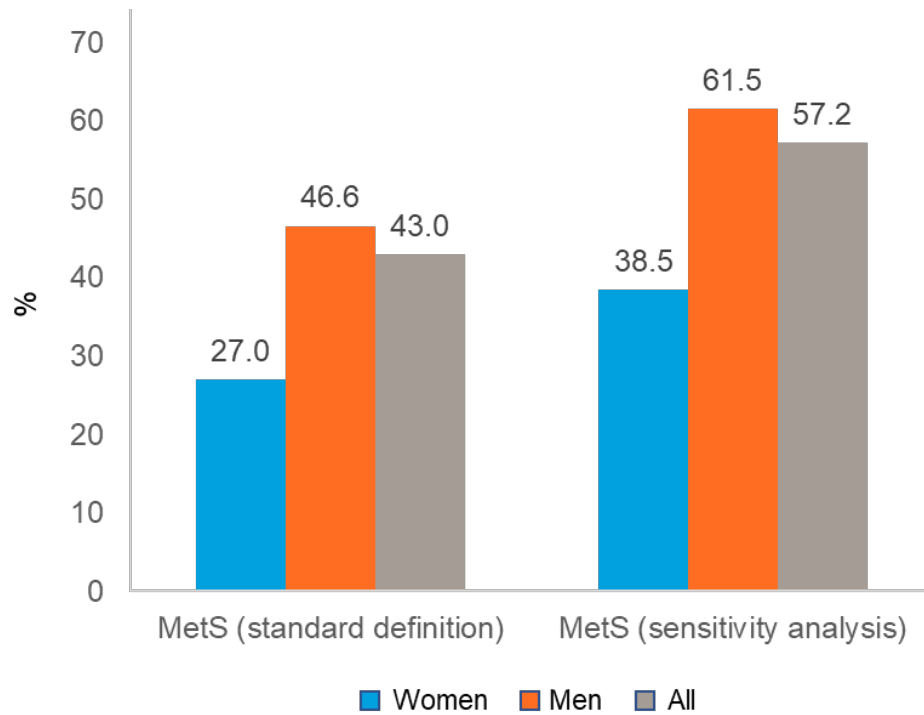


**Figure S1. Sex distribution of study cohorts (2018-2020).**



**Figure S2. Prevalence of metabolic syndrome in patients with T2D (2018-2020).**

T2D, type 2 diabetes.



**Figure S3. Prevalence of metabolic syndrome in patients with T2D using a modified definition in the 2020 study cohort.**

Prevalence of metabolic syndrome as defined by the criteria used for the main analysis (standard definition based on the Japanese Committee for the Diagnostic Criteria of Metabolic Syndrome [2005] [21, 22]) and the sensitivity analysis (standard definition and/or a prescription of antihypertensive agent or lipid-lowering drug).

MetS, patients with metabolic syndrome; T2D, type 2 diabetes.