

SUPPLEMENTAL TABLE 3. Sensitivity analyses for the risk of severe COVID-19 infection (hospitalization or death due to COVID-19). Analyses include persons with chronic conditions defined 5 years prior to diagnosis date, 18 months prior to diagnosis date, and excluding persons with <6 months of information prior to diagnosis date. The reference population for each analysis is all persons without the chronic condition. Conditions which remained significant after adjustment are highlighted in bold type.

Condition	Chronic diseases defined 5 years prior to diagnosis N=9,928		Chronic diseases defined 18 months prior to diagnosis N=9,928		Excluding persons with <6 months of information prior to diagnosis N=8,537	
	N (%) at risk	HR (95% CI) ^a	N (%) at risk	HR (95% CI) ^a	N (%) at risk	HR (95% CI) ^a
Affective disorders, schizophrenia, other psychoses	64 (0.6)	3.53 (2.21, 5.62)^b	<50	--	64 (0.8)	3.55 (2.23, 5.66)^b
Anxiety, depression, bipolar disorders	2,337 (23.5)	1.49 (1.23, 1.81)^b	1,447 (14.6)	1.39 (1.12, 1.73)^b	2,330 (27.3)	1.54 (1.27, 1.87)^b
Arrhythmias	1,673 (16.9)	1.72 (1.40, 2.10)^b	914 (9.2)	1.89 (1.53, 2.32)^b	1,666 (19.5)	1.77 (1.44, 2.18)^b
Asthma	777 (7.8)	1.38 (1.06, 1.80)^b	443 (4.5)	1.48 (1.08, 2.03)^b	776 (9.1)	1.41 (1.08, 1.84)^b
Attention-deficit, conduct, and disruptive behavior disorder	443 (4.5)	1.35 (0.77, 2.37)	235 (2.4)	0.44 (0.11, 1.76)	443 (5.2)	1.41 (0.81, 2.47)
Back problems	2,466 (24.8)	1.53 (1.27, 1.85)^b	1,115 (11.2)	1.28 (1.04, 1.59)^b	2,461 (28.8)	1.60 (1.32, 1.94)^b
Biliary and liver disorders	767 (7.7)	2.07 (1.70, 2.54)^b	298 (3.0)	1.99 (1.52, 2.60)^b	762 (8.9)	2.13 (1.74, 2.61)^b
Bowel disorders	730 (7.4)	1.28 (1.02, 1.59)^b	284 (2.9)	1.39 (1.02, 1.90)^b	729 (8.5)	1.29 (1.04, 1.61)^b
Cancer	688 (6.9)	1.24 (0.98, 1.56)	443 (4.5)	1.13 (0.87, 1.48)	687 (8.1)	1.24 (0.99, 1.57)
Central nervous system vascular ischemia	102 (1.0)	1.28 (0.86, 1.90)	50 (0.5)	1.28 (0.77, 2.13)	101 (1.2)	1.28 (0.86, 1.90)
Chronic kidney disease	344 (3.5)	1.89 (1.48, 2.40)^b	296 (3.0)	1.89 (1.49, 2.41)^b	344 (4.0)	1.88 (1.48, 2.40)^b
Chronic neurologic disorders	2,090 (21.1)	1.76 (1.45, 2.15)^b	1,001 (10.1)	1.73 (1.41, 2.12)^b	2,084 (24.4)	1.84 (1.51, 2.25)^b
Conditions associated with dizziness or vertigo	1,060 (10.7)	1.28 (1.04, 1.59)^b	428 (4.3)	1.56 (1.18, 2.07)^b	1,057 (12.4)	1.31 (1.06, 1.62)^b
Deficiency and other anemia	870 (8.8)	1.76 (1.43, 2.17)^b	412 (4.2)	1.93 (1.51, 2.45)^b	869 (10.2)	1.79 (1.45, 2.21)^b
Developmental disorders	132 (1.3)	3.05 (1.67, 5.57)^b	55 (0.6)	3.85 (1.43, 10.37)^b	131 (1.5)	3.14 (1.72, 5.73)^b
Diabetes	1,460 (14.7)	1.38 (1.13, 1.69)^b	1,077 (10.9)	1.50 (1.23, 1.83)^b	1,460 (17.1)	1.43 (1.17, 1.75)^b
Disorders of lipid metabolism	1,662 (16.7)	1.50 (1.20, 1.86)^b	1,201 (11.1)	1.35 (1.10, 1.66)^b	1,660 (19.4)	1.56 (1.25, 1.95)^b
Epilepsy, convulsions	164 (1.7)	2.05 (1.36, 3.10)^b	86 (0.9)	3.07 (1.86, 5.07)^b	163 (1.9)	2.08 (1.38, 3.15)^b
Esophageal disorders	1,334 (13.4)	1.38 (1.13, 1.67)^b	695 (7.0)	1.51 (1.20, 1.88)^b	1,331 (15.6)	1.41 (1.16, 1.72)^b
Gastric and duodenal ulcer	294 (3.0)	1.50 (1.10, 2.05)^b	111 (1.1)	1.43 (0.89, 2.30)	293 (3.4)	1.53 (1.12, 2.09)^b
Gout and other crystal arthropathies	188 (1.9)	1.17 (0.85, 1.62)	94 (1.0)	1.20 (0.79, 1.83)	187 (2.2)	1.18 (0.86, 1.63)
Headache	1,817 (18.3)	1.56 (1.28, 1.91)^b	763 (7.7)	1.83 (1.41, 2.38)^b	1,812 (21.2)	1.62 (1.32, 1.99)^b

^a All hazard ratios are adjusted for age (continuous variable within each age stratum), sex, race, ethnicity, BMI category, and smoking status.

^b Hazard ratio is statistically significant after adjusting for multiple comparisons

SUPPLEMENTAL TABLE 3 (continued). Sensitivity analyses for the risk of severe COVID-19 infection (hospitalization or death due to COVID-19). Analyses include persons with chronic conditions defined 5 years prior to diagnosis date, 18 months prior to diagnosis date, and excluding persons with <6 months of information prior to diagnosis date. The reference population for each analysis is all persons without the chronic condition. Conditions which remained significant after adjustment are highlighted in bold type.

Condition	Chronic diseases defined 5 years prior to diagnosis N=9,928		Chronic diseases defined 18 months prior to diagnosis N=9,928		Excluding persons with <6 months of information prior to diagnosis N=8,537	
	N (%) at risk	HR (95% CI) ^a	N (%) at risk	HR (95% CI) ^a	N (%) at risk	HR (95% CI) ^a
Heart failure	308 (3.1)	2.44 (1.93, 3.09)^b	202 (2.0)	2.51 (1.94, 3.25)^b	307 (3.6)	2.44 (1.92, 3.09)^b
Heart valve disorders	429 (4.3)	1.46 (1.14, 1.87)^b	222 (2.2)	1.51 (1.12, 2.04)^b	428 (5.0)	1.47 (1.15, 1.88)^b
Hematologic disorders	674 (6.8)	2.24 (1.82, 2.76)^b	291 (2.9)	1.94 (1.46, 2.56)^b	671 (7.9)	2.29 (1.85, 2.82)^b
Hepatitis	121 (1.2)	1.69 (1.08, 2.65)^b	62 (0.6)	1.69 (0.96, 2.98)	121 (1.4)	1.75 (1.12, 2.73)^b
Hypertension	1,544 (15.6)	1.50 (1.20, 1.88)^b	1,228 (12.4)	1.33 (1.07, 1.65)^b	1,543 (18.1)	1.56 (1.24, 1.97)^b
Ischemic heart disease	584 (5.9)	1.86 (1.50, 2.31)^b	359 (3.6)	1.81 (1.43, 2.30)^b	582 (6.8)	1.88 (1.51, 2.35)^b
Obstructive pulmonary disorders	668 (6.7)	1.76 (1.42, 2.19)^b	291 (2.9)	1.98 (1.53, 2.56)^b	668 (7.8)	1.78 (1.43, 2.22)^b
Osteoarthritis, joint disorders	3,084 (31.1)	1.06 (0.87, 1.29)	1,382 (13.9)	1.08 (0.88, 1.32)	3,078 (36.1)	1.10 (0.90, 1.35)
Osteoporosis	186 (1.9)	1.69 (1.25, 2.30)^b	97 (1.0)	2.18 (1.52, 3.13)^b	186 (2.2)	1.68 (1.24, 2.28)^b
Other diseases of bladder and urethra	172 (1.7)	1.41 (1.00, 1.98)	91 (0.9)	1.89 (1.22, 2.93)^b	172 (2.0)	1.41 (1.00, 1.99)
Other endocrine disorders	2,574 (25.9)	1.67 (1.37, 2.05)^b	1,422 (14.3)	1.65 (1.35, 2.01)^b	2,565 (30.1)	1.73 (1.41, 2.13)^b
Other upper respiratory tract disease	1,949 (19.6)	1.29 (1.06, 1.57)^b	701 (7.1)	1.38 (1.06, 1.78)^b	1,947 (22.8)	1.33 (1.09, 1.61)^b
Paralysis	64 (0.6)	2.04 (1.25, 3.33)^b	<50	--	63 (0.7)	2.06 (1.26, 3.36)^b
Peripheral and central vascular disorders	359 (3.6)	1.56 (1.23, 1.99)^b	207 (2.1)	1.70 (1.29, 2.24)^b	358 (4.2)	1.57 (1.24, 2.00)^b
Peripheral venous disorders	683 (6.9)	1.32 (1.06, 1.66)^b	277 (2.8)	1.40 (1.03, 1.90)^b	682 (8.0)	1.34 (1.07, 1.68)^b
Personality disorders	82 (0.8)	3.08 (1.68, 5.65)^b	<50	--	82 (1.0)	3.12 (1.70, 5.72)^b
Rheumatoid arthritis and related disease	131 (1.3)	1.11 (0.71, 1.72)	81 (0.8)	1.13 (0.65, 1.96)	131 (1.5)	1.11 (0.71, 1.72)
Skin disorders	3,473 (35.0)	1.13 (0.94, 1.37)	1,627 (16.4)	1.23 (1.01, 1.51)	3,464 (40.6)	1.18 (0.98, 1.43)
Substance use disorders	1,022 (10.3)	1.42 (1.09, 1.84)^b	525 (5.3)	1.43 (1.03, 2.00)^b	1,015 (11.9)	1.43 (1.10, 1.86)^b
Systemic lupus erythematosus and connective tissue disorders	55 (0.6)	1.78 (0.92, 3.45)	<50	--	55 (0.6)	1.78 (0.92, 3.46)
Thyroid disorders	761 (7.7)	1.67 (1.34, 2.09)^b	513 (5.2)	1.71 (1.34, 2.18)^b	761 (8.9)	1.68 (1.35, 2.11)^b
Tuberculosis	66 (0.7)	1.81 (0.84, 3.86)	<50	--	66 (0.8)	1.85 (0.87, 3.96)

^a All models are adjusted for age (continuous variable within each age stratum), sex, race, ethnicity, BMI category, and smoking status.

^b Hazard ratio is statistically significant after adjusting for multiple comparisons