Supplemental Table 1. Characteristics of people with systemic autoimmune rheumatic diseases with test-confirmed COVID-19, overall and stratified by resolved or prolonged symptom duration by the World Health Organization definition of 90 days or longer (n=429).

	Overall n=429	Symptoms resolved in less than 90 days n=387	Prolonged symptom duration 90 days or longer (active or resolved)
			n=42
Median COVID-19 symptom duration (or as of survey if ongoing), days (IQR)	14 (7, 20)	14 (7, 21)	180 (120, 211.5)
COVID-19 symptom resolution			
Yes	398 (92.8)	387 (100)	11 (26.2)
No	24 (5.6)	0 (0.0)	24 (57.1)
Not sure	7 (1.6)	0 (0.0)	7 (16.7)
Date of COVID-19 onset			
December 2019 to June 2020	104 (24.2)	94 (24.3)	10 (23.8)
July 2020 to December 2020	205 (47.8)	179 (46.3)	26 (61.9)
January 2021 to July 2021	120 (28.0)	114 (29.5)	6 (14.3)
Acute COVID-19 severity			
Not hospitalized and no difficulties performing daily activities	154 (35.9)	165 (42.6)	9 (21.4)
Not hospitalized but had difficulties performing daily activities	206 (48.0)	179 (46.3)	27 (64.3)
Hospitalized	41 (9.6)	35 (9)	6 (14.3)
Hospitalized and required ICU care	8 (1.9)	8 (2.1)	0 (0.0)

Age (years), mean (SD)	47.8 (12.5)	47.7 (12.6)	51.8 (13)
Age categories, years			
18-29	37 (8.6)	35 (9.0)	2 (4.8)
30-49	191 (44.5)	175 (45.2)	16 (38.1)
50-69	185 (43.1)	164 (42.4)	21 (50)
70+	16 (3.7)	13 (3.4)	3 (7.1)
Female sex	358 (83.4)	323 (83.5)	35 (83.3)
Race/ethnicity			
Asian (South, East Asian)	11 (2.6)	10 (2.6)	1 (2.4)
Black	13 (3.0)	13 (3.4)	0 (0.0)
Hispanic, Latinx or Latin American	84 (19.6)	81 (20.9)	3 (7.1)
Middle Eastern or North African	11 (2.6)	11 (2.8)	0 (0.0)
American Indian/ Alaska Natve/Aboriginal/ Indigenous/ 1st Nations	1 (0.2)	1 (0.3)	0 (0.0)
White	257 (60.0)	224 (57.9)	33 (78.6)
Other	48 (11.2)	43 (11.1)	5 (11.9)
WHO region			
Americas	270 (62.9)	244 (63)	26 (61.9)
European	135 (31.5)	119 (30.7)	16 (38.1)
African	1 (0.2)	1 (0.3)	0 (0.0)
South-East Asian	8 (1.9)	8(2.1)	0 (0.0)
Western Pacific	1 (0.2)	1 (0.3)	0 (0.0)
Eastern Mediterranean	10 (2.3)	10 (2.6)	0 (0.0)
Education			
High school (secondary level/GED) or less	67 (15.6)	62 (16.0)	5 (11.9)

Some college	101 (23.5)	92 (23.8)	9 (21.4)
Bachelor degree (graduated college)	107 (24.9)	95 (24.5)	12 (28.6)
Graduate or professional degree	140 (32.6)	134 (34.6)	16 (38.1)
SARD type			
Rheumatoid arthritis	167 (38.9)	158 (40.8)	9 (21.4)
Systemic lupus erythematosus	65 (15.2)	62 (16)	3 (7.1)
Systemic sclerosis	18 (4.2)	17 (4.4)	1 (2.4)
Sjögren's syndrome	50 (11.7)	42 (10.9)	8 (19)
Systemic vasculitis	32 (7.5)	27 (7)	5 (11.9)
Spondyloarthritis, other than psoriatic arthritis	47 (11.0)	40 (10.3)	7 (16.7)
Psoriatic arthritis	31 (7.2)	28 (7.2)	3 (7.1)
Other connective tissue disease*	15 (3.5)	11 (2.8)	4 (9.5)
Myositis	51 (11.9)	46 (11.9)	5 (11.9)
Sarcoidosis	2 (0.5)	2 (0.5)	0 (0)
Antiphospholipid syndrome	11 (2.6)	9 (2.3)	2 (4.8)
Autoinflammatory disease	4 (0.9)	4 (1)	0 (0.0)
Comorbidity count, mean (SD)	4.4 (2.5)	4.3 (2.5)	5.3 (2.1)
Individual comorbidities			
Hypertension	114 (26.6)	95 (24.5)	19 (45.2)
Lung disease‡	76 (17.7)	69 (17.8)	7 (16.7)
Obesity	100 (23.3)	88 (22.7)	12 (28.6)
Diabetes	28 (6.5)	26 (6.7)	2 (4.8)
Cardiovascular disease	17 (4.0)	12 (3.1)	5 (11.9)
Osteoarthritis	34 (7.9)	28 (7.2)	6 (14.3)

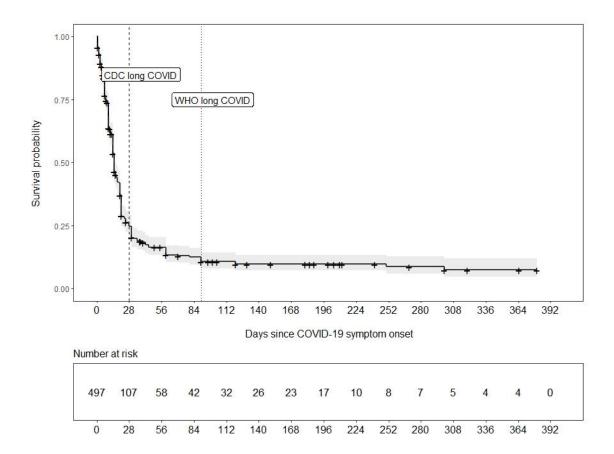
Fibromyalgia	51 (11.9)	42 (10.9)	9 (21.4)
No comorbidity	143 (33.3)	137 (35.4)	6 (14.3)

n (%) are presented unless indicated otherwise.

^{*}Other connective tissue disease includes mixed connective tissue disease and undifferentiated connective tissue disease.

[‡]Lung disease includes asthma, emphysema, chronic bronchitis, chronic obstructive pulmonary disease, pulmonary hypertension, interstitial lung disease, idiopathic pulmonary fibrosis, and other lung diseases.

Supplemental Figure 1. Kaplan Meier survival curve for outcome of symptom resolution among systemic autoimmune rheumatic diseases with report of test-confirmed COVID-19 (n=497). The censoring event was ongoing symptom duration at time of survey (either unresolved or unsure if resolved). This secondary analysis also included 56 people with unresolved COVID-19 symptoms and <28 days duration at time of survey. The vertical lines at days 28 and 90 indicate prolonged symptom duration, as defined by the US Centers for Disease Control and Prevention and the World Health Organization, respectively. The symptom durations at the 25th, 50th, 75th, 95th, and 99th percentiles were 7, 14, 21, 150, and 301 days, respectively.



Supplemental Table 2. Characteristics of people with systemic autoimmune rheumatic diseases with test-confirmed COVID-19 and unresolved symptoms of <28 days duration at time of symptoms (p. 56).

of survey (n=56).

or survey (n=56).	Symptom duration less than 28 days (unresolved)
	n=56
Median ongoing COVID-19 symptom duration at time of survey, days (IQR)	7 (4, 12)
COVID-19 symptom resolution	
Yes	0 (0.0)
No	46 (82.1)
Not sure	10 (17.9)
Date of COVID-19 onset	
December 2019 to June 2020	7 (12.5)
July 2020 to December 2020	15 (26.8)
January 2021 to July 2021	34 (60.7)
Acute COVID-19 severity	
Not hospitalized and no difficulties performing daily activities	25 (44.6)
Not hospitalized but had difficulties performing daily activities	25 (44.6)
Hospitalized	6 (10.7)
Hospitalized and required ICU care	0 (0.0)
Age (years), mean (SD)	48.4 (12.3)
Age categories, years	
18-29	2 (3.6)
30-49	35 (62.5)
50-69	15 (26.8)
70+	4 (7.1)
Female sex	50 (89.3)
Race/ethnicity	
Asian (South, East Asian)	3 (5.4)
Black	1 (1.8)

Hispanic, Latinx or Latin American	6 (10.7)
Middle Eastern or North African	1 (1.8)
American Indian/ Alaska Native/ Aboriginal/ Indigenous/ 1st Nations	1 (1.8)
White	36 (64.3)
Other	8 (14.3)
WHO region	
Americas	29 (51.8)
European	21 (37.5)
African	2 (3.6)
South-East Asian	2 (3.6)
Western Pacific	0 (0.0)
Eastern Mediterranean	1 (1.8)
Education	
High school (secondary level/GED) or less	12 (21.4)
Some college	15 (26.8)
Bachelor degree (graduated college)	15 (26.8)
Graduate or professional degree	14 (25.0)
SARD type	
Rheumatoid arthritis	33 (58.9)
Systemic lupus erythematosus	8 (14.3)
Systemic sclerosis	1 (1.8)
Sjögren's syndrome	7 (12.5)
Systemic vasculitis	4 (7.1)
Spondyloarthritis, other than psoriatic arthritis	6 (10.7)
Psoriatic arthritis	2 (3.6)
Other connective tissue disease*	3 (5.4)
Myositis	4 (7.1)
Sarcoidosis	0 (0.0)
Antiphospholipid syndrome	0 (0.0)

Comorbidity count, mean (SD)	4.4 (2.6)
Individual comorbidities	
Hypertension	15 (26.8)
Lung disease‡	8 (14.3)
Obesity	11 (19.6)
Diabetes	5 (8.9)
Cardiovascular disease	3 (5.4)
Osteoarthritis	2 (3.6)
Fibromyalgia	5 (8.9)
No comorbidity	15 (26.8)

n (%) are presented unless indicated otherwise.

^{*}Other connective tissue disease includes mixed connective tissue disease and undifferentiated connective tissue disease.

[‡]Lung disease includes asthma, emphysema, chronic bronchitis, chronic obstructive pulmonary disease, pulmonary hypertension, interstitial lung disease, idiopathic pulmonary fibrosis, and other lung diseases.

Supplemental Table 3. Characteristics of people with systemic autoimmune rheumatic diseases with possible COVID-19, overall and stratified by resolved or prolonged symptom duration by US Centers for Disease Control and Prevention definition of 28 days or longer (n=381).

	All Respondents n=381	Symptom duration less than 28 days (resolved)	Symptom duration 28 days or longer
		n=229	n=152
Median COVID-19 symptom duration (or as of survey if ongoing), days (IQR)	20 (10, 42)	10 (7, 15)	49 (30, 150)
COVID-19 symptom resolution			
Yes	337 (88.5)	229 (100.0)	108 (71.1)
No	27 (7.1)	0 (0.0)	27 (17.8)
Not sure	17 (4.5)	0 (0.0)	17 (11.2)
COVID-19 diagnosis			
Diagnosed myself based on symptoms	249 (65.4)	156 (68.1)	93 (61.2)
My doctor diagnosed me based only on symptoms	116 (30.4)	61 (26.6)	55 (36.2)
I was diagnosed based on positive test results	0 (0.0)	0 (0.0)	0 (0.0)
Not sure	12 (3.1)	9 (3.9)	3 (2.0)
Other	4 (1.0)	3 (1.3)	1 (0.7)
Date of COVID-19 onset			
December 2019 to June 2020	282 (74.0)	151 (65.9)	131 (86.2)
July 2020 to December 2020	56 (14.7)	46 (20.1)	10 (6.6)
January 2021 to July 2021	41 (10.8)	31 (13.5)	10 (6.6)
Acute COVID-19 severity			

Not hospitalized and no difficulties performing daily			
activities	126 (33.1)	92 (40.2)	34 (22.4)
Not hospitalized but had difficulties performing daily			
activities	248 (65.1)	135 (59)	113 (74.3)
Hospitalized	7 (1.8)	2 (0.9)	5 (3.3)
Hospitalized and required ICU care	0 (0.0)	0 (0.0)	0 (0.0)
Age categories, years			
18-29	20 (5.2)	15 (6.6)	5 (3.3)
30-49	158 (41.5)	95 (41.5)	63 (41.4)
50-69	173 (45.4)	104 (45.4)	69 (45.4)
70+	30 (7.9)	15 (6.6)	15 (9.9)
Female sex	329 (86.4)	192 (83.8)	137 (90.1)
Race/ethnicity			
Asian (South, East Asian)	7 (1.8)	3 (1.3)	4 (2.6)
Black	6 (1.6)	6 (2.6)	0(0)
Hispanic, Latinx or Latin American	33 (8.7)	24 (10.5)	9 (5.9)
Middle Eastern or North African	8 (2.1)	5 (2.2)	3 (2.0)
American Indian/ Alaska Native/ Aboriginal/			
Indigenous/ 1st Nations	1 (0.3)	0 (0.0)	1 (0.7)
White	280 (73.5)	162 (70.7)	118 (77.6)
Other	45 (11.8)	29 (12.7)	16 (10.5)
WHO region			
Americas	215 (56.4)	130 (56.8)	85 (55.9)
European	152 (39.9)	89 (38.9)	63 (41.4)

South-East Asian	4 (1.0)	4 (1.7)	0 (0.0)
Western Pacific	2 (0.5)	1 (0.4)	1 (0.7)
Eastern Mediterranean	3 (0.8)	2 (0.9)	1 (0.7)
Education			
High school (secondary level/GED) or less	43 (11.3)	29 (12.7)	14 (9.2)
Some college	92 (24.1)	54 (23.6)	38 (25.0)
Bachelor degree (graduated college)	97 (25.5)	56 (24.5)	41 (27.0)
Graduate or professional degree	148 (38.8)	90 (39.3)	58 (38.2)
SARD type			
Rheumatoid arthritis	166 (43.6)	95 (41.5)	71 (46.7)
Systemic lupus erythematosus	75 (19.7)	44 (19.2)	31 (20.4)
Systemic sclerosis	10 (2.6)	7 (3.1)	3 (2.0)
Sjögren's syndrome	62 (16.3)	39 (17.0)	23 (15.1)
Systemic vasculitis	21 (5.5)	12 (5.2)	9 (5.9)
Spondyloarthritis, other than psoriatic arthritis	33 (8.7)	18 (7.9)	15 (9.9)
Psoriatic arthritis	26 (6.8)	18 (7.9)	8 (5.3)
Other connective tissue disease*	46 (12.1)	27 (11.8)	19 (12.5)
Myositis	43 (11.3)	24 (10.5)	19 (12.5)
Sarcoidosis	4 (1.0)	3 (1.3)	1 (0.7)
Antiphospholipid syndrome	16 (4.2)	8 (3.5)	8 (5.3)
Autoinflammatory disease	7 (1.8)	5 (2.2)	2 (1.3)
Comorbidity count, median (IQR)	1 (0, 2)	1 (0, 2)	1 (0, 2)
Individual comorbidities			

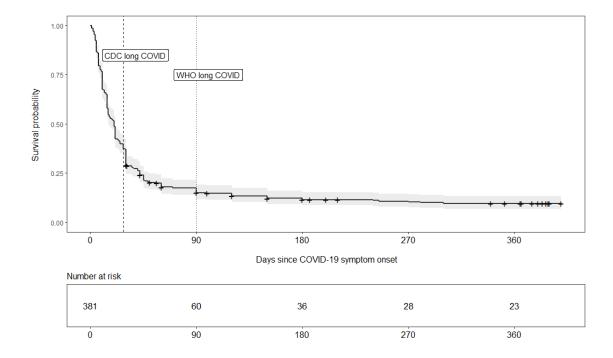
Hypertension	106 (27.8)	65 (28.4)	41 (27.0)
Lung disease‡	114 (29.9)	56 (24.5)	58 (38.2)
Obesity	90 (23.6)	52 (22.7)	38 (25.0)
Diabetes	21 (5.5)	15 (6.6)	6 (3.9)
Cardiovascular disease	27 (7.1)	15 (6.6)	12 (7.9)
Osteoarthritis	61 (16.0)	30 (13.1)	31 (20.4)
Fibromyalgia	86 (22.6)	46 (20.1)	40 (26.3)
No comorbidity	105 (27.6)	65 (28.4)	40 (26.3)

n (%) are presented unless indicated otherwise.

^{*}Other connective tissue disease includes mixed connective tissue disease and undifferentiated connective tissue disease.

[‡]Lung disease includes asthma, emphysema, chronic bronchitis, chronic obstructive pulmonary disease, pulmonary hypertension, interstitial lung disease, idiopathic pulmonary fibrosis, and other lung diseases.

Supplemental Figure 2. Kaplan Meier survival curve for outcome of symptom resolution among systemic autoimmune rheumatic diseases with report of <u>possible COVID-19</u> (n=381). The censoring event was ongoing symptom duration at time of survey (either unresolved or unsure if resolved). The vertical lines at days 28 and 90 indicate prolonged symptom duration, as defined by the US Centers for Disease Control and Prevention and the World Health Organization, respectively. The symptom durations at the 25th, 50th, 75th, 95th, and 99th percentiles were 10, 20, 42, 365, and 400 days, respectively.



Supplemental Table 3. Characteristics of people with systemic autoimmune rheumatic diseases with test-confirmed and possible COVID-19, overall and stratified by resolved or prolonged symptom duration by US Centers for Disease Control and Prevention definition of 28 days or longer (n=822).

	All Respondents	Symptom duration less than 28 days (resolved)	Symptom duration 28 days or longer
	n=822	n=563	n=259
Median COVID-19 symptom duration (or as of survey if ongoing), days (IQR)	15 (8, 30)	10 (7, 16)	56 (30, 150)
COVID-19 symptom resolution			
Yes	735 (89.4)	563 (100.0)	172 (66.4)
No	59 (7.2)	0 (0.0)	59 (22.8)
Not sure	28 (3.4)	0 (0.0)	28 (10.8)
COVID-19 diagnosis			
Diagnosed myself based on symptoms	249 (30.2)	156 (27.7)	93 (35.9)
My doctor diagnosed me based only on symptoms	116 (13.2)	334 (59.3)	107 (41.3)
I was diagnosed based on positive test results	441 (53.6)	61 (10.8)	55 (21.2)
Not sure	12 (1.5)	9 (1.6)	3 (1.2)
Other	4 (0.5)	3 (0.5)	1 (0.4)
Date of COVID-19 onset			
December 2019 to June 2020	390 (47.4)	230 (40.9)	160 (61.8)
July 2020 to December 2020	264 (32.1)	194 (34.5)	70 (27)
January 2021 to July 2021	166 (20.2)	138 (24.5)	28 (10.8)
Acute COVID-19 severity			

Not hospitalized and no difficulties performing daily activities	301 (36.6)	249 (44.2)	52 (20.1)
Not hospitalized but	301 (30.0)	243 (44.2)	JZ (ZU.1)
had difficulties			
performing daily activities	459 (55.8)	281 (49.9)	178 (68.7)
Hospitalized	53 (6.4)	28 (5.0)	25 (9.7)
Hospitalized and required ICU care	9 (1.1)	5 (0.9)	4 (1.5)
Age categories, years			
18-29	57 (6.9)	45 (8.0)	12 (4.6)
30-49	355 (43.2)	254 (45.1)	101 (39.0)
50-69	364 (44.3)	238 (42.3)	126 (48.6)
70+	46 (5.6)	26 (4.6)	20 (7.7)
Female sex	698 (84.9)	468 (83.1)	230 (88.8)
Race/ethnicity			
Asian (South, East Asian)	18 (2.2)	10 (1.8)	8 (3.1)
Black	19 (2.3)	14 (2.5)	5 (1.9)
Hispanic, Latinx or Latin American	117 (14.2)	96 (17.1)	21 (8.1)
Middle Eastern or North African	19 (2.3)	15 (2.7)	4 (1.5)
American Indian/ Alaska Native/ Aboriginal/			
Indigenous/ 1st Nations	2 (0.2)	1 (0.2)	1 (0.4)
White	548 (66.7)	356 (63.2)	192 (74.1)
Other	94 (11.4)	67 (11.9)	27 (10.4)
WHO region			
Americas	492 (59.9)	341 (60.6)	151 (58.3)
European	292 (35.5)	191 (33.9)	101 (39.0)
African	4 (0.5)	3 (0.5)	1 (0.4)

South-East Asian	12 (1.5)	11 (2.0)	1 (0.4)
Western Pacific	3 (0.4)	2 (0.4)	1 (0.4)
Eastern Mediterranean	13 (1.6)	10 (1.8)	3 (1.2)
Education			
High school (secondary level/GED) or less	113 (13.7)	84 (14.9)	29 (11.2)
Some college	195 (23.7)	136 (24.2)	59 (22.8)
Bachelor degree (graduated college)	207 (25.2)	138 (24.5)	69 (26.6)
Graduate or professional degree	302 (36.7)	201 (35.7)	101 (39.0)
SARD type			
Rheumatoid arthritis	340 (41.4)	234 (41.6)	106 (40.9)
Systemic lupus erythematosus	144 (17.5)	99 (17.6)	45 (17.4)
Systemic sclerosis	28 (3.4)	23 (4.1)	5 (1.9)
Sjögren's syndrome	113 (13.7)	75 (13.3)	38 (14.7)
Systemic vasculitis	53 (6.4)	36 (6.4)	17 (6.6)
Spondyloarthritis, other than psoriatic arthritis	83 (10.1)	51 (9.1)	32 (12.4)
Psoriatic arthritis	57 (6.9)	44 (7.8)	13 (5.0)
Other connective tissue disease*	61 (7.4)	38 (6.7)	23 (8.9)
Myositis	94 (11.4)	62 (11)	32 (12.4)
Sarcoidosis	6 (0.7)	5 (0.9)	1 (0.4)
Antiphospholipid syndrome	27 (3.3)	15 (2.7)	12 (4.6)
Autoinflammatory disease	11 (1.3)	8 (1.4)	3 (1.2)
Comorbidity count, median (IQR)	1 (0, 2)	1 (0, 2)	1 (0, 2)
Individual comorbidities			

Hypertension	223 (27.1)	144 (25.6)	79 (30.5)
Lung disease‡	194 (23.6)	111 (19.7)	83 (32)
Obesity	192 (23.4)	123 (21.8)	69 (26.6)
Diabetes	49 (6)	35 (6.2)	14 (5.4)
Cardiovascular disease	44 (5.4)	25 (4.4)	19 (7.3)
Osteoarthritis	96 (11.7)	51 (9.1)	45 (17.4)
Fibromyalgia	137 (16.7)	81 (14.4)	56 (21.6)
No comorbidity	250 (30.4)	185 (32.9)	65 (25.1)

n (%) are presented unless indicated otherwise.

^{*}Other connective tissue disease includes mixed connective tissue disease and undifferentiated connective tissue disease.

[‡]Lung disease includes asthma, emphysema, chronic bronchitis, chronic obstructive pulmonary disease, pulmonary hypertension, interstitial lung disease, idiopathic pulmonary fibrosis, and other lung diseases.

Supplemental Figure 3. Kaplan Meier survival curve for outcome of symptom resolution among systemic autoimmune rheumatic diseases with report of <u>test-confirmed and possible COVID-19</u> (n=822). The censoring event was ongoing symptom duration at time of survey (either unresolved or unsure if resolved). The vertical lines at days 28 and 90 indicate prolonged symptom duration, as defined by the US Centers for Disease Control and Prevention and the World Health Organization, respectively. The symptom durations at the 25th, 50th, 75th, 95th, and 99th percentiles were 8, 15, 30, 210, and 398 days, respectively.

