Estimating the Respiratory Syncytial Virus (RSV) Health Utility Values for Older Adults and their Caregivers in the Japanese population: a Time Trade-Off (TTO) study

This study aims to estimate the **humanistic burden of RSV in older adults** as perceived by the general population living in **Japan.** The results showed that the **general population in Japan would trade off several days to avoid an RSV episode.**

Digital poster
Supplemental data
SCAN ME
Narrated summary
Audio File

Regina Rendas-Baum[1], Jakob Bjorner[1], Victor Preckler[2], Taizo Matsuki[3*], Yufan Ho[4], Daniel Molnar[2], Shinichi Noto[5], Ataru Igarashi[6]

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Acceptance code: PCR201

Aims

To estimate health utility values associated with RSV for older adults and their caregivers within the Japanese adult population

Demographics

The final analytical sample consisted of **241 adults from Japan**, of which **45 were caregivers** of patients ≥60 years old who had recently experienced RSV or a similar condition.*

*More details and demographic information available via QR code

Mean age 51.9 years old, 45.2% female*

Study design

This is a cross-sectional study conducted through an online survey, gathering data from a sample of Japanese adults residing in Japan within the general population.[1]

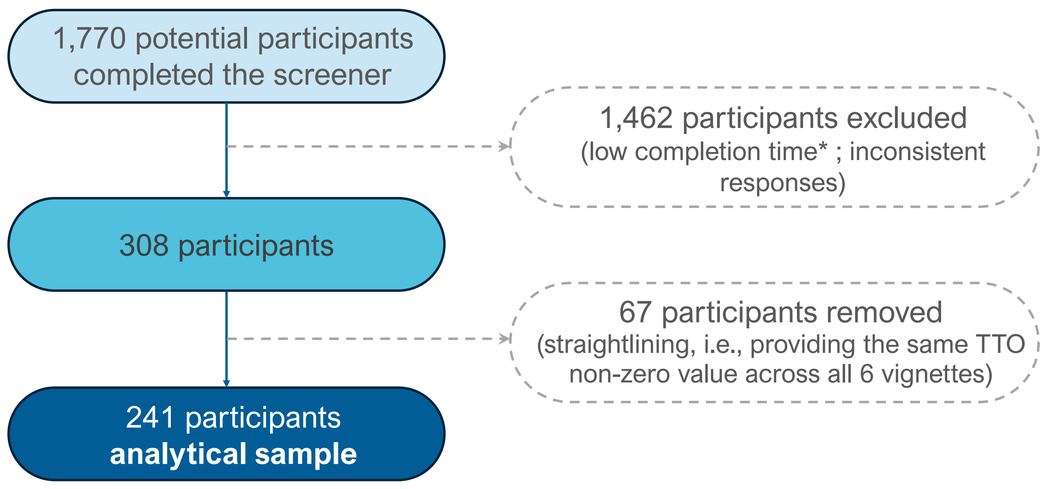
The survey was comprised of six vignettes describing three different types of RSV-related health states for patients and their caregivers.

Vignettes were developed and validated by clinicians, health outcomes researchers, patients, and caregivers.[2]

The three health states were: sLRTI, LRTI, and URTI.

TTO approach: Participants were asked to quantify the number of days they would be willing to trade off from their end of life to avoid the described health states or caregiving responsibilities for a family member in those states.[3,4]

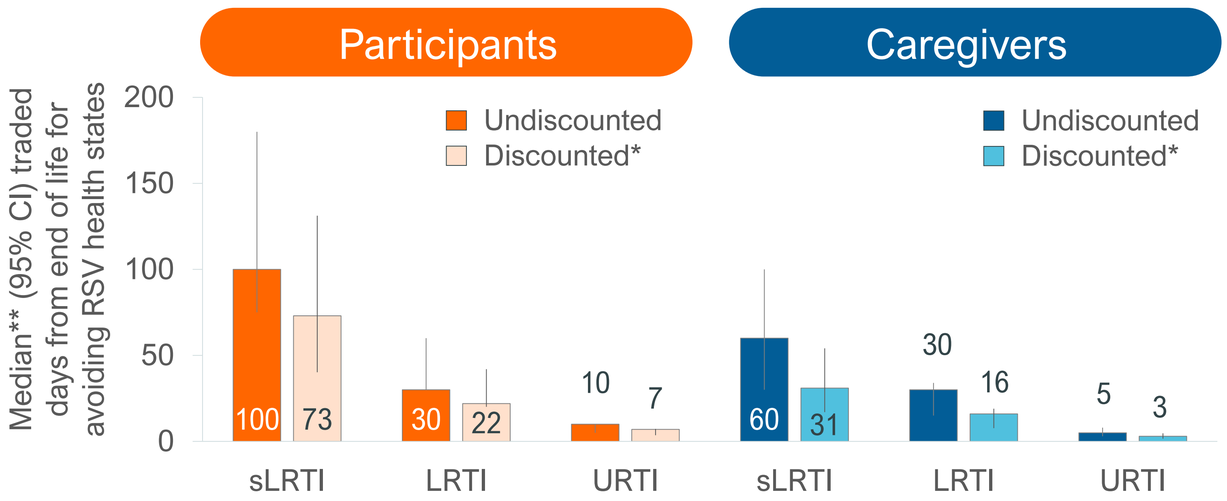
Participant flow



*<4 minutes to respond

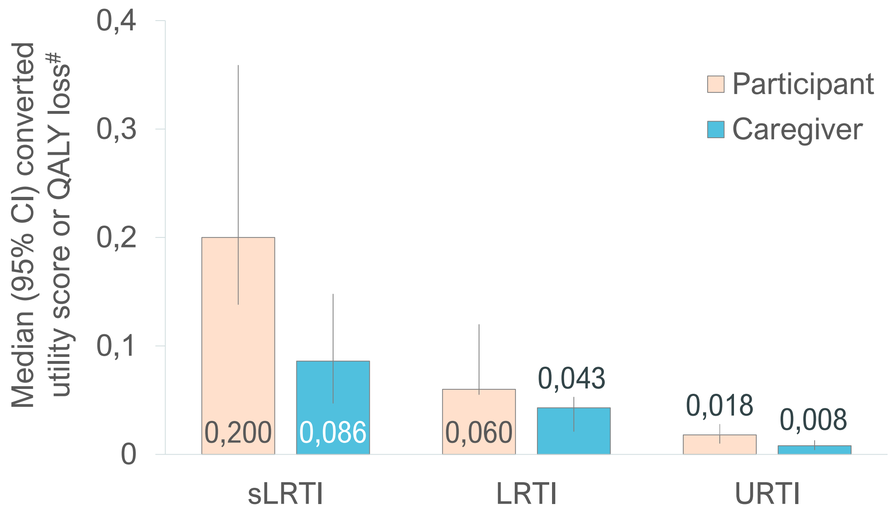
Results

Traded days from end of life for avoiding RSV health states and caregiving for RSV cases increased with the severity of the RSV condition



*Discounting was applied based on a discounting rate of 2% and based on the life expectancy of a Japanese 70-year-old
**Given the significant skewness in the distribution of TTO values, median values were reported and 5% trimming was applied to the mean (and associated CI)

QALY loss calculated from TTO values



#QALY losses were calculated by dividing the discounted TTO values by 365. QALY losses statistical analysis across 3 older and caregiver health states are available in the supplementary file accessible via QR code

Background

RSV is a common viral pathogen that affects the respiratory system, causing respiratory tract infections in individuals of all ages.

In older adults, adults with chronic illnesses, and immunocompromised adults, RSV infection can lead to more severe diseases, frequently leading to hospitalization.[5]

Two vaccines to prevent RSV-LRTI in older adults are approved in EU and US.[4] Only one is now approved for RSV prevention in older adults in Japan.[6]

Data on impact of RSV on quality of life in adults in Japan are scarce.

Conclusions

Our findings show that the Japanese population is willing to trade several days from end of life to avoid RSV infection and caregiving burdens for a relative patient with RSV.

Limitations: The authors acknowledge limitations in online data collection, with steps taken to ensure data quality and representativeness.

Abbreviations

CI, confidence interval; **EU**, European Union; **LRTI**, lower respiratory tract infection; **QALY**, quality-adjusted life-year; **RSV**, respiratory syncytial virus; **sLRTI**, severe lower respiratory tract infection; **TTO**, time trade-off; **URTI**, upper respiratory tract infection; **US**, United States.

Acknowledgements

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Disclosures

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Conflicts of interest: RR-B and JB received consulting fees from GSK through their institution (Quality Metric). VP, YH and DM are employed by and holds shares in GSK. TM was employed by GSK during the study conduct but is now employed by MSD. AI received consulting fees from GSK in the context of this work. AI also received grants or consulting fees from Takeda Pharmaceuticals Inc., Pfizer Inc., Moderna Inc., and MSD Inc. outside of this work. SN has nothing to disclose. The authors declare no other financial and non-financial relationships and activities.

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Supplementary file

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Participant demographic characteristics, general population and caregivers

The final analytical sample consisted of 241 Japanese adults, of which 45 were caregivers of patients ≥60 years old who had recently experienced RSV or a similar condition: (1) Bronchiolitis, (2) Pneumonia, (3) Pertussis, (4) RSV infection, (5) COVID-19, (6) Flu; (7) Other respiratory infection where symptoms included fever, difficulty breathing, a sore throat, headaches, and cough, some of which lasted 4 or more days.

Characteristic	Final analytical sample (n=241)	Non-caregiver sample (n=196)	Caregiver sample (n=45)
Age (y), mean (min/max)	51.9 (19 / 84)	51.8 (19 / 84)	51.9 (21 / 76)
Age (y), % (n)			
18 – 34	11.2 (27)	10.7 (21)	13.3 (6)
35 – 44	18.7 (45)	18.9 (37)	17.8 (8)
45 – 59	40.7 (98)	41.8 (82)	35.6 (16)
60 – 74	27.0 (65)	26.0 (51)	31.1 (14)
75 and older	2.5 (6)	2.6 (5)	2.2 (1)
Female, % (n)	45.2 (109)	41.8 (82)	60.0 (27)
Education, % (n)			
Junior high school/Lower secondary school	2.5 (6)	3.1 (6)	0 (0)
Senior high school/Upper secondary school/Technical school	35.3 (85)	37.2 (73)	26.7 (12)
University: Undergraduate	51.5 (124)	49.0 (96)	62.2 (28)
Graduate school: Master/PhD	10.8 (26)	10.7 (21)	11.1 (5)
Lives alone, % (n)	21.2 (51)	23.0 (45)	13.3 (6)
Type of household, % (n)			
I live in a house or apartment	98.8 (238)	99.0 (194)	97.8 (44)
I live in a facility where I receive paid assistance with my daily activities	0.4 (1)	0 (0)	2.2 (1)
Other	0.8 (2)	1.0 (2)	0 (0)
Employment status, % (n)			
Employed/self-employed full-time	46.9 (113)	44.4 (87)	57.8 (26)
Employed/self-employed part-time	14.5 (35)	13.8 (27)	17.8 (8)
Unemployed and looking for work	5.4 (13)	5.6 (11)	4.4 (2)
Retired/pension	13.3 (32)	14.8 (29)	6.7 (3)
Homemaker	15.4 (37)	16.3 (32)	11.1 (5)
Unable to work	1.2 (3)	1.5 (3)	0 (0)
Other	3.3 (8)	3.6 (7)	2.2 (1)

Abbreviations

max, maximum; **min**, minimum; **n,** number; **RSV**, respiratory syncytial virus, **y**, years.

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TTO amounts for avoiding older adult RSV health states increased with severity of the RSV condition

	sLRTI (n=241)	LRTI (n=241)	URTI (n=241)
Undiscounted			
Mean	775.0	439.2	269.4
(95% CI)	582.7, 955.5	314.0, 586.0	174.7, 375.8
Trimmed mean*	502.7	225.7	94.5
(Trimmed 95% CI)*	392.0, 617.5	171.4, 287.2	68.9, 124.2
Median	100	30	10
(95% CI)	75.0, 180.0	30.0, 60.0	5.0, 10.0
10th/90th percentile	0 / 3,000	0 / 1,000	0 / 400
Min/Max	0 / 7,400	0 / 7,400	0 / 5,800
Discounted (2%)#			
Mean	541.2	309.2	190.5
(95% CI)	416.9, 683.8	214.3, 408.0	116.4, 268.1
Trimmed mean*	350.8	158.5	66.6
(Trimmed 95% CI)*	270.2, 433.6	118.7, 201.8	48.5, 86.3
Median	73	22	7
(95% CI)	40.2, 131.2	20.1, 42.0	3.6, 7.3
10th/90th percentile	0 / 2,187	0 / 729	0 / 268
Min/Max	0 / 4,958	0 / 4,958	0 / 4,228

TTO amounts for avoiding caregiver RSV health states increased with severity of the RSV condition

	sLRTI (n=241)	LRTI (n=241)	URTI (n=241)
Undiscounted			
Mean	647.6	415.4	211.0
(95% CI)	481.5, 831.4	295.4, 550.2	130.6, 313.5
Trimmed mean*	397.6	210.9	84.7
(Trimmed 95% CI)*	303.6, 512.5	154.3, 266.5	61.2, 111.8
Median	60	30	5
(95% CI)	30.0, 100.0	15.0, 34.0	3.0, 8.0
10th/90th percentile	0 / 2,000	0 / 1,000	0 / 400
Min/Max	0 / 7,400	0 / 7,400	0 / 7,400
Discounted (2%)#			
Mean	332.5	212.8	105.5
(95% CI)	244.5, 431.0	149.1, 289.9	65.7, 151.4
Trimmed mean*	197.7	111.4	43.5
(Trimmed 95% CI)*	147.5, 255.5	83.3, 143.4	30.8, 57.2
Median	31	16	3
(95% CI)	17.0, 54.1	7.7, 19.0	1.6, 4.7
10th/90th percentile	0 / 1,159	0 / 569	0 / 247
Min/Max	0 / 5,306	0 / 4,031	0 / 3,720

Scaled TTO amounts (QALY loss) for avoiding older adult RSV health states, final analytical sample

	sLRTI (n=241)	LRTI (n=241)	URTI (n=241)
Undiscounted			
Mean	2.12	1.20	0.74
(95% CI)	1.63, 2.65	0.86, 1.60	0.45, 1.00
Trimmed mean*	1.37	0.62	0.26
(Trimmed 95% CI)*	1.08, 1.70	0.48, 0.78	0.18, 0.33
Median	0.274	0.082	0.027
(95% CI)	0.205, 0.493	0.082, 0.164	0.014, 0.027
10th/90th percentile	0.000 / 8.214	0.000 / 2.738	0.000 / 1.095
Min/Max	0.000 / 20.260	0.000 / 20.260	0.000 / 15.880
Discounted (2%)#			
Mean	1.48	0.85	0.52
(95% CI)	1.14, 1.85	0.60, 1.13	0.32, 0.74
Trimmed mean*	0.96	0.43	0.18
(Trimmed 95% CI)*	0.75, 1.19	0.34, 0.55	0.13, 0.23
Median	0.200	0.060	0.018
(95% CI)	0.138, 0.359	0.055, 0.120	0.010, 0.020
10th/90th percentile	0.000 / 5.988	0.000 / 1.996	0.000 / 0.734
Min/Max	0.000 / 13.574	0.000 / 13.574	0.000 / 11.576

Scaled TTO amounts (QALY loss) for avoiding RSV caregiver health states for older adults, final analytical sample

	sLRTI (n=241)	LRTI (n=241)	URTI (n=241)
Undiscounted			
Mean	1.77	1.14	0.58
(95% CI)	1.34, 2.26	0.80, 1.51	0.34, 0.83
Trimmed mean*	1.09	0.58	0.23
(Trimmed 95% CI)*	0.84, 1.37	0.44, 0.74	0.16, 0.30
Median	0.164	0.082	0.014
(95% CI)	0.082, 0.274	0.041, 0.104	0.008, 0.022
10th/90th percentile	0.000 / 5.476	0.000 / 2.738	0.000 / 1.095
Min/Max	0.000 / 20.260	0.000 / 20.260	0.000 / 20.260
Discounted (2%)#			
Mean	0.91	0.58	0.29
(95% CI)	0.68, 1.19	0.40, 0.79	0.17, 0.41
Trimmed mean*	0.54	0.31	0.12
(Trimmed 95% CI)*	0.42, 0.68	0.23, 0.39	0.09, 0.15
Median	0.086	0.043	0.008
(95% CI)	0.047, 0.148	0.021, 0.052	0.004, 0.013
10th/90th percentile	0.000 / 3.174	0.000 / 1.557	0.000 / 0.676
Min/Max	0.000 / 14.526	0.000 / 11.037	0.000 / 10.185

* Note: Sample trimmed at 5%. #Discounting was applied based on a discounting rate of 2% and based on the life expectancy of a 70-year-old Japanese adult

References

1. Global Perspectives. Global Perspectives - Patient Search and Engagement. 2019. Available from: https://global-perspectives.com/#global. Accessed October 1st 2023.
2. Rendas-Baum R, et al. A time trade-off (TTO) study to estimate respiratory syncytial virus (RSV) related utility values for older adults in the United States (US). Boston. 2023. https://www.ispor.org/docs/default-source/intl2023/ispor23rendas-baumposter126708-pdf.pdf?sfvrsn=2519d505_0 Accessed October 1st 2023.
3. Roy LM. Deriving health utility weights for infants with Respiratory Syncytial Virus (RSV) [dissertation]. 2013. Vancouver, Canada: University of British Columbia. Available from: https://open.library.ubc.ca/soa/cIRcle/collections/ubctheses/24/items/1.0074259. Accessed October 1st 2023.
4. Matanock A, et al. MMWR Morb Mortal Wkly Rep. 2019;68(46):1069-1075. doi: 10.15585/mmwr.mm6846a5. https://pubmed.ncbi.nlm.nih.gov/31751323/
5. CDC. Respiratory Syncytial Virus Infection (RSV). 2022. https://www.cdc.gov/rsv/about/symptoms.html. Accessed October 1st 2023.
6. GSK. Japan's Ministry of Health, Labour and Welfare approves GSK's Arexvy, the country's first respiratory syncytial virus (RSV) vaccine for older adults. 2023. https://www.gsk.com/en-gb/media/press-releases/japan-s-ministry-of-health-labour-and-welfare-approves-gsk-s-arexvy/ Accessed September 25th 2023.

Abbreviations

CI, confidence interval; **LRTI**, lower respiratory tract infection; **Max**, maximum; **Min**, minimum; **QALY**, quality-adjusted life-year; **RSV**, respiratory syncytial virus; **sLRTI**, severe lower respiratory tract infection; **TTO**, time trade-off; **URTI**, upper respiratory tract infection

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Sample vignettes employed to inquire with participants and/or caregivers about the number of days they are willing to sacrifice from end of life in order to prevent RSV infection

Set A

[SLRTI_1_SetA: Severe (hospitalized) lower respiratory tract infection – Patient; use SLRTI_1_SetA for the field below holding the number of days]

Imagine that you are **70 years old** and are diagnosed with an RSV infection.

During the RSV infection, you are extremely tired and experience severe wheezing and coughing episodes with pain in your chest. You have a fever, have trouble breathing, and your lips and fingertips turn blue. You worry that the disease may worsen and that you may die. For 7 days from Day 3 to Day 9, you are hospitalized in the intensive care unit (ICU) and receive fluids through a needle in your arm (an IV) and oxygen through a mask or intubation. Fourteen days after the symptoms started, you feel better, but the cough may linger for several weeks. You may not completely return to your previous health state, or you may experience sequelae.

At age 70 it is estimated you have left to live. Imagine that you could avoid this RSV infection by shortening your life by some days.
If you could avoid the RSV infection, how many days you are willing to shorten your life? Please indicate the number below.

_____ days

[SLRTI_2_SetA: Severe (hospitalized) lower respiratory tract infection - Spouse]

Now imagine that the 70-year-old person who has been diagnosed with the RSV infection is your **spouse**.
Your spouse is confined to bed with severe respiratory symptoms – wheezing, coughing, etc.-, a fever, and blue lips and fingers. You take time from your regular activities to stay home and help your spouse with basic needs, such as eating and staying hydrated, and you try to provide emotional support, but you worry that your spouse may get worse and possibly die. For 7 days from Day 3 to Day 9 after the symptoms started, your spouse is admitted to the intensive care unit (ICU). While your spouse is in the hospital, you rearrange your schedule so you can visit every day, and you may even stay at the hospital overnight to be with your spouse. Despite your spouse showing some improvement, the stress of providing care [to your spouse] affects you emotionally and you have difficulty focusing on other tasks. Your spouse returns home from the hospital with a lingering cough. You decide to spend more time at home to keep an eye on your spouse's condition for the next few weeks, which may impact your regular activities.

Imagine that by giving up some days from **your life** you can avoid the **burden of providing care** to your spouse with RSV infection has on **you**. Consider **you could avoid not only physical burden but also mental and psychological burden** caused by providing care.
In order to avoid **the burden on you** as a caregiver caused by your spouse with the RSV infection, by how many days do you think your life could be shortened? Please indicate the number [of days] below.
(Please do not include the burden [experienced] by the patient himself/herself (your spouse) with the RSV infection but consider only **the burden that occurs to you as a caregiver**.)

_____ days

[LRTI_1_SetA: Lower respiratory tract infection - Patient]

Imagine that you are **70 years old** and are diagnosed with an RSV infection.

During the RSV infection, you are abnormally tired. You have a severe cough that interrupts your daily activities and your sleep. You are feverish, have trouble breathing, and experience periods of wheezing. You see your doctor and take medicine and cough syrup to help with the symptoms. As the symptoms continue to worsen through day 5, you worry that the disease may worsen further and that you will end up in the hospital. Ten days after the symptoms started you feel better, but the cough lingers for 4 weeks as you gradually return to your previous health state.

At age 70 it is estimated you have left to live. Imagine that you could avoid this RSV infection by shortening your life by some days.
If you could avoid the RSV infection, how many days you are willing to shorten your life? Please indicate the number below.

_____ days

Abbreviations

ICU, intensive care unit, **IV,** Intravenous, **LRTI**, lower respiratory tract infection, **RSV**, Respiratory syncytial virus, **sLRTI,** severe lower respiratory tract infection, **URTI**, Upper respiratory tract infection

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Set A (continued)

[LRTI_2_SetA: Lower respiratory tract infection - Spouse]

Now imagine that the 70-year-old person who has been diagnosed with the RSV infection is your **spouse**.

You worry about your spouse, as they are feverish and have trouble breathing. You accompany your spouse to the doctor and buy medicine to help with the symptoms. As the symptoms continue to worsen through day 5, you take some time to stay home with your spouse. While you are at home with your spouse, you take time off work, cancel social appointments, and spend less time on hobbies. You worry that the disease could worsen further and that your spouse may end up in the hospital. Ten days after the symptoms started, you feel relieved to see your spouse improving. As your spouse's cough lingers for the next 4 weeks, you refrain from some of your usual activities to spend time with your spouse and worry that the infection might come back.

Imagine that by giving up some days from **your life** you can avoid the **burden of providing care** to your spouse with RSV infection has on **you**. Consider **you could avoid not only physical burden but also mental and psychological burden** caused by providing care.
In order to avoid **the burden on you** as a caregiver caused by your spouse with the RSV infection, by how many days do you think your life could be shortened? Please indicate the number [of days] below.
(Please do not include the burden [experienced] by the patient himself/herself (your spouse) with the RSV infection but consider only **the burden that occurs to you as a caregiver**.)

_____ days

[URTI_1_SetA: Upper respiratory tract infection – Patient]

Imagine that you are **70 years old** and are diagnosed with an RSV infection.

During the RSV infection, you are tired and experience a runny or stuffy nose, a sore throat, and a cough. You feel feverish with a headache and aches in your body. You see your doctor and take medicine and cough syrup to help with the symptoms. You worry that the disease may worsen. The symptoms are the worst around day 5 and last until Day 8. After the symptoms are gone, you return to your previous health state.

At age 70 it is estimated you have left to live. Imagine that you could avoid this RSV infection by shortening your life by some days.
If you could avoid the RSV infection, how many days you are willing to shorten your life? Please indicate the number below.

_____ days

[URTI_2_SetA: Upper respiratory tract infection - Spouse]

Now imagine that the 70-year-old person who has been diagnosed with the RSV infection is your **spouse**.

Your spouse is feverish, has a headache, and complains of body aches. Seeing your spouse this way makes you worried, especially while you are away from home and cannot be with her or him. For the next 5 days the symptoms continue, and you decide to cancel some of your social appointments so you can spend more time with your spouse. On Day 8 the symptoms are gone, and your spouse is back to their normal state. You feel relieved to get your usual life back.

Imagine that by giving up some days from **your life** you can avoid the **burden of providing care** to your spouse with RSV infection has on **you**. Consider **you could avoid not only physical burden but also mental and psychological burden** caused by providing care.
In order to avoid **the burden on you** as a caregiver caused by your spouse with the RSV infection, by how many days do you think your life could be shortened? Please indicate the number [of days] below.
(Please do not include the burden [experienced] by the patient himself/herself (your spouse) with the RSV infection but consider only **the burden that occurs to you as a caregiver**.)

_____ days

Thank you for completing this survey!

Abbreviations

ICU, intensive care unit, **IV,** Intravenous, **LRTI**, lower respiratory tract infection, **RSV**, Respiratory syncytial virus, **sLRTI,** severe lower respiratory tract infection, **URTI**, Upper respiratory tract infection

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Set B

[SLRTI_1_SetB: Severe (hospitalized) lower respiratory tract infection – Patient]

Imagine that you are **70 years old** and are diagnosed with an RSV infection.

During the RSV infection, you are extremely tired and experience severe wheezing and coughing episodes with pain in your chest. You have a fever, have trouble breathing, and your lips and fingertips turn blue. You worry that the disease may worsen and that you may die. For 7 days from Day 3 to Day 9, you are hospitalized in the intensive care unit (ICU) and receive fluids through a needle in your arm (an IV) and oxygen through a mask or intubation. Fourteen days after the symptoms started, you feel better, but the cough may linger for several weeks. You may not completely return to your previous health state, or you may experience sequelae.

At age 70 it is estimated you have left to live. Imagine that you could avoid this RSV infection by shortening your life by some days.
If you could avoid the RSV infection, how many days you are willing to shorten your life? Please indicate the number below.

_____ days

[SLRTI_2_SetB: Severe (hospitalized) lower respiratory tract infection - Mother or Father]

Now imagine that the 70-year-old person who has been diagnosed with the RSV infection is your **mother or father**.
Your mother or father is confined to bed with severe respiratory symptoms – wheezing, coughing, etc. -, a fever, and blue lips and fingers. You take time from your regular activities to help your mother or father with basic needs, such as eating and staying hydrated, and you try to provide emotional support, but you worry that your mother or father may get worse and possibly die. For 7 days from Day 3 to Day 9 after the symptoms started, your mother or father is admitted to the intensive care unit (ICU). While your mother or father is in the hospital, you rearrange your schedule so you can visit her or him every day, and you may even stay at the hospital overnight to be with your mother or father. Despite your mother or father showing some improvement, the stress of providing care [to your mother or father] affects you emotionally and you have difficulty focusing on other tasks. Your mother or father returns home from the hospital with a lingering cough. You decide to spend more time with your mother or father at home to keep an eye on their condition for the next few weeks without going out, which may impact your regular activities.

Imagine that by giving up some days from **your life** you can avoid the **burden of providing care** to your spouse with RSV infection has on **you**. Consider **you could avoid not only physical burden but also mental and psychological burden** caused by providing care.
In order to avoid **the burden on you** as a caregiver caused by your spouse with the RSV infection, by how many days do you think your life could be shortened? Please indicate the number [of days] below.
(Please do not include the burden [experienced] by the patient himself/herself (your spouse) with the RSV infection but consider only **the burden that occurs to you as a caregiver**.)

_____ days

[LRTI_1_SetB: Lower respiratory tract infection - Patient]

Imagine that you are **70 years old** and are diagnosed with an RSV infection.

During the RSV infection, you are abnormally tired. You have a severe cough that interrupts your daily activities and your sleep. You are feverish, have trouble breathing, and experience periods of wheezing. You see your doctor and take medicine and cough syrup to help with the symptoms. As the symptoms continue to worsen through day 5, you worry that the disease may worsen further and that you will end up in the hospital. Ten days after the symptoms started you feel better, but the cough lingers for 4 weeks as you gradually return to your previous health state.

At age 70 it is estimated you have left to live. Imagine that you could avoid this RSV infection by shortening your life by some days.
If you could avoid the RSV infection, how many days you are willing to shorten your life? Please indicate the number below.

_____ days

Abbreviations

ICU, intensive care unit, **IV,** Intravenous, **LRTI**, lower respiratory tract infection, **RSV**, Respiratory syncytial virus, **sLRTI,** severe lower respiratory tract infection, **URTI**, Upper respiratory tract infection

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Estimating the Respiratory Syncytial Virus (RSV) Health Utility Values for Older Adults and their Caregivers in the Japanese population: a Time Trade-Off (TTO) study

Supplementary file

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Set B (continued)

[LRTI_2_SetB: Lower respiratory tract infection - Mother or Father]

Now imagine that the 70-year-old person who has been diagnosed with the RSV infection is your **mother or father**.

You worry about your mother or father as they are feverish and having trouble breathing. You accompany your mother or father to the doctor and buy medicine to help with the symptoms. As the symptoms continue to worsen through day 5, you take some time to be with her or him. While you are at home with your mother or father, you take time off work, cancel social appointments, and spend less time on hobbies. You worry that the disease could worsen further and that your mother or father may end up in the hospital. Ten days after the symptoms started, you feel relieved to see your mother or father improving. As your mother's or father's cough lingers for the next 4 weeks, you refrain from some of your usual activities to spend time with your mother or father and worry that the infection might come back.

Imagine that by giving up some days from **your life** you can avoid the **burden of providing care** to your spouse with RSV infection has on **you**. Consider **you could avoid not only physical burden but also mental and psychological burden** caused by providing care.
In order to avoid **the burden on you** as a caregiver caused by your spouse with the RSV infection, by how many days do you think your life could be shortened? Please indicate the number [of days] below.
(Please do not include the burden [experienced] by the patient himself/herself (your spouse) with the RSV infection but consider only **the burden that occurs to you as a caregiver**.)

_____ days

[URTI_1_SetB: Upper respiratory tract infection – Patient]

Imagine that you are **70 years old** and are diagnosed with an RSV infection.

During the RSV infection, you are tired and experience a runny or stuffy nose, a sore throat, and a cough. You feel feverish with a headache and aches in your body. You see your doctor and take medicine and cough syrup to help with the symptoms. You worry that the disease may worsen. The symptoms are the worst around day 5 and last until Day 8. After the symptoms are gone, you return to your previous health state.

At age 70 it is estimated you have left to live. Imagine that you could avoid this RSV infection by shortening your life by some days.
If you could avoid the RSV infection, how many days you are willing to shorten your life? Please indicate the number below.

_____ days

[URTI_2_SetB: Upper respiratory tract infection - Mother or Father]

Now imagine that the 70-year-old person who has been diagnosed with the RSV infection is your **mother or father**.

Your mother or father is feverish, has a headache, and complains of body aches. Seeing your mother or father this way makes you worried, especially while you are away and cannot be with her or him. For the next 5 days the symptoms continue, and you decide to cancel some of your social appointments so you can spend more time with your mother or father. On Day 8 the symptoms are gone, and your mother or father is back to their normal state. You feel relieved to get your usual life back.

Imagine that by giving up some days from **your life** you can avoid the **burden of providing care** to your spouse with RSV infection has on **you**. Consider **you could avoid not only physical burden but also mental and psychological burden** caused by providing care.
In order to avoid **the burden on you** as a caregiver caused by your spouse with the RSV infection, by how many days do you think your life could be shortened? Please indicate the number [of days] below.
(Please do not include the burden [experienced] by the patient himself/herself (your spouse) with the RSV infection but consider only **the burden that occurs to you as a caregiver**.)

_____ days

Thank you for completing this survey!

Abbreviations

ICU, intensive care unit, **IV,** Intravenous, **LRTI**, lower respiratory tract infection, **RSV**, Respiratory syncytial virus, **sLRTI,** severe lower respiratory tract infection, **URTI**, Upper respiratory tract infection

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