

# Beliefs about and confidence in new medical treatments: lessons from COVID-19 vaccines

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<b>Registration date</b> 06/10/2022	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 19/12/2022	<b>Condition category</b> Other	<input type="checkbox"/> Individual participant data <input type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

Public health depends on both the technological developments of medical treatments and the public's willingness to take up the developed treatments. The public's willingness to take up new treatments depends on the public's beliefs about the costs and benefits of the treatments. By tracing updates on the public beliefs about COVID-19 vaccines before and after they began to be administered to the general public in Japan, this study investigates the relationships between the evolution of public beliefs about COVID-19 vaccines and the public willingness to take up the vaccines.

### Who can participate?

A sample of 15,000 respondents in Japan recruited through a survey company, Rakuten Insight, Ltd.

### What does the study involve?

The researchers ask whether respondents have taken COVID-19 vaccines, and, if so, whether they experienced side effects. They ask whether the respondents have taken a second and third dose of COVID-19 vaccines and whether they want to take a fourth dose of COVID-19 vaccines. They ask the respondents to choose preferred hypothetical conditions for vaccination between two, which are fully randomly generated. Respondents are allowed to deny either condition and not to take up COVID-19 vaccines. They are also asked about their demographic and socio-economic backgrounds.

### What are the possible benefits and risks of participating?

As a benefit, respondents will receive a certain amount of points to be used for shopping. Since the survey is done using the internet, respondents will face no substantial risk.

### Where is the study run from?

University of Tokyo (Japan)

### When is the study starting and how long is it expected to run for?

September 2022 to November 2022

Who is funding the study?  
The Japan Society for the Promotion of Science (Japan)

Who is the main contact?  
Prof. Masaki Nakabayashi, PhD, mn@iss.u-tokyo.ac.jp

## Contact information

### Type(s)

Principal Investigator

### Contact name

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## **Additional identifiers**

### **EudraCT/CTIS number**

Nil known

### **IRAS number**

### **ClinicalTrials.gov number**

Nil known

### **Secondary identifying numbers**

Nil known

## **Study information**

### **Scientific Title**

Beliefs about and confidence in new medical treatments: lessons from COVID-19 vaccines

### **Study objectives**

This study investigates whether belief updates about the costs and benefits of medical treatments affect confidence in medical treatments, taking an example from vaccinations against COVID-19. Testable hypotheses are:

1. Unexpected side effects, which are part of the costs, affect confidence in vaccination
2. Changes in the financial and time costs of vaccination affect willingness to take up vaccination

### **Ethics approval required**

Old ethics approval format

### **Ethics approval(s)**

Approved 28/09/2022, Ethical Board, Institute of Social Science, The University of Tokyo (Ethical Review Board, Institute of Social Science, The University of Tokyo, Hongo 7-3-1, Bunkyo, Tokyo 1130033, Japan; +81 (0)358414908; kenkyu-kikaku@iss.u-tokyo.ac.jp), ref: 106

### **Study design**

Observational internet survey and randomized controlled trial

**Primary study design**

Interventional

**Secondary study design**

Randomised controlled trial

**Study setting(s)**

Internet/virtual

**Study type(s)**

Prevention

**Participant information sheet**

Not applicable

**Health condition(s) or problem(s) studied**

Beliefs about and confidence in new medical treatments

**Interventions**

This study is the final stage of a longitudinal interventional study that began in the first wave in February 2021, when vaccines for COVID-19 were not available to the general public in Japan, followed by the second wave in March 2022, when COVID-19 vaccines had been available to the general public.

The researchers have asked whether respondents had experienced the delayed localized hypersensitivity reactions to COVID-19 vaccines, which are referred to as "COVID arm" and were mostly unexpected to most of the public, conditional on vaccine take up, as the vaccines were novel. They use the "COVID arm" symptoms as our first treatment that could have updated the beliefs about the costs of medical treatment.

1. In this wave, the researchers ask respondents whether they took a third dose of the COVID-19 vaccine and investigate whether the probability of taking the third dose was associated with having experienced the "COVID arm" symptoms after taking up the first or second dose of a COVID-19 vaccine.
2. Additionally, a fully randomized conjoint experiment is designed to generate two hypothetical conditions of vaccination against COVID-19, where respondents are allowed to accept or decline vaccines and are asked under which conditions they might more likely take up COVID-19 vaccines.

The fully randomized conjoint design generates various conditions for taking up COVID-19 vaccines. Since attributes of the hypothetical conditions are fully randomized, the researchers can identify a change in attribute and a change in willingness to take up COVID-19 vaccines as a causal effect. Also, they investigate whether the causal channel is affected by past experience of "COVID arm" symptoms.

The 15000 respondents are randomly assigned to three arms by the same probability, 1/3. In the first arm, respondents are shown a description of the efficacy of COVID-19 vaccines. In the second arm, respondents are shown the same description of the vaccine efficacy and an additional description of the positive externality of taking a vaccine to close people, i.e., if the

respondent gets vaccinated, the probability that people close to the respondent get vaccinated would increase. In the third arm, respondents are shown the same description of the vaccine efficacy and an additional description of the negative externality of declining vaccination, i.e., if the respondent does not get vaccinated, the probability that people close to the respondent get vaccinated would decrease.

## **Intervention Type**

Behavioural

## **Primary outcome measure**

1. Self-reported subjective cost of/confidence in vaccination measured using a background characteristics survey when the participant responded to the survey between 01/11/2022 and 15/11/2022
2. Self-reported history of taking up COVID-19 vaccines measured using a background characteristics survey when the participant responded to the survey between 01/11/2022 and 15/11/2022
3. Impact of side effects on beliefs about vaccines, and through them, confidence in vaccination, and how long the change in confidence in vaccination sustains, measured using the results of this background characteristics survey and those implemented in 01/11/2022 and 15/11/2022
4. Marginal means (probability) of wanting to take the next dose of a COVID-19 vaccine, of being confident in vaccination, and of being confident in science, measured when the participant responded to the survey between 01/11/2022 and 15/11/2022

## **Secondary outcome measures**

1. Hypothetical vaccination conditions under which the costs of taking up vaccines vary and respondents' preferred conditions measured using a fully randomized conjoint experimental design when the participant responded to the survey between 01/11/2022 and 15/11/2022
2. Experiences of "COVID-19 arm" symptoms measured using a background characteristics survey when the participant responded to the survey between 01/11/2022 and 15/11/2022

## **Overall study start date**

28/09/2022

## **Completion date**

24/11/2022

# **Eligibility**

## **Key inclusion criteria**

A non-probability sample of 15,000 respondents through a survey company, Rakuten Insight, Ltd, including participants of the past three survey waves

## **Participant type(s)**

Healthy volunteer

## **Age group**

Adult

## **Sex**

Both

**Target number of participants**

15000

**Key exclusion criteria**

Respondents who do not give informed consent at the top page of the internet survey

**Date of first enrolment**

09/11/2022

**Date of final enrolment**

24/11/2022

**Locations****Countries of recruitment**

Japan

**Study participating centre**

**The University of Tokyo**

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**Sponsor information****Organisation**

University of Tokyo

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**Sponsor type**

University/education

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ROR

<https://ror.org/057zh3y96>

## Funder(s)

### Funder type

Research organisation

### Funder Name

Japan Society for the Promotion of Science

### Alternative Name(s)

KAKENHI, , Gakushin, JSPS KAKEN, JSPS Grants-in-Aid for Scientific Research, JSPS

### Funding Body Type

Government organisation

### Funding Body Subtype

National government

### Location

Japan

## Results and Publications

### Publication and dissemination plan

Planned publication in a peer-reviewed journal.

### Intention to publish date

15/11/2023

### Individual participant data (IPD) sharing plan

The researchers plan to transfer the data to the Center for Social Research and Data Archives, Institute of Social Science, The University of Tokyo, from which the data will be publicly available to researchers. Until the transfer, data will be available upon request to Masaki Nakabayashi (mn@iss.u-tokyo.ac.jp). When the data will become available and for how long: 15/11/2023, and will be available until the data is transferred to the Center for Social Research and Data Archives, Institute of Social Science, The University of Tokyo (<https://csrda.iss.u-tokyo.ac.jp/english/>). After being transferred to the center, data will be available to researchers from the center upon request. Center for Social Research and Data Archives, Institute of Social Science, The University of Tokyo: ssjda@iss.u-tokyo.ac.jp. The purpose of data usage should be for research. This is the only criteria and the researchers do not impose additional restrictions. They obtain consent from participants when they respond to our internet survey. On the top page, they describe the purpose of the survey and ask respondents whether they agree that researchers use the data for research purposes. Only if they agree with it, are they allowed to proceed to the survey

questions. The data will be entirely anonymized by the survey company Rakuten Insight, Ltd. There are no additional ethical or legal restrictions.

**IPD sharing plan summary**

Stored in publicly available repository, Available on request