

Online Appendix A: Stimulus materials

[Wave 1]

[vaccine concern – pre-intervention]

First, we'd like to ask you a question about medical vaccines.

In general, how concerned are you about serious side effects from vaccines?

- Extremely concerned [5]
- Very concerned [4]
- Somewhat concerned [3]
- Not too concerned [2]
- Not at all concerned [1]

[randomization after delay – control group receives no message]

[danger intervention]

Please examine the following information about seasonal influenza (“the flu”) carefully.

What is influenza (also called flu)?

The flu is a contagious respiratory illness caused by influenza viruses that infect the nose, throat, and lungs. It can cause mild to severe illness, and at times can lead to death.

Signs and symptoms of flu

People who have the flu often feel some or all of these signs and symptoms:

- Fever or feeling feverish/chills
- Cough
- Sore throat
- Runny or stuffy nose
- Muscle or body aches
- Headaches
- Fatigue (very tired)
- Some people may have vomiting and diarrhea, though this is more common in children than adults.

How serious is the flu?

Flu is unpredictable and how severe it is can vary widely from one season to the next depending on many things, including:

- what flu viruses are spreading,
- how much flu vaccine is available
- when vaccine is available
- how many people get vaccinated, and

-how well the flu vaccine is matched to flu viruses that are causing illness.

Certain people are at greater risk for serious complications if they get the flu. This includes older people, young children, pregnant women and people with certain health conditions (such as asthma, diabetes, or heart disease), and persons who live in facilities like nursing homes.

Flu seasons are unpredictable and can be severe. Over a period of 30 years, between 1976 and 2006, estimates of flu-associated deaths in the United States range from a low of about 3,000 to a high of about 49,000 people.

[correction intervention]

Please examine the following information about seasonal influenza (“the flu”) carefully.

Can the flu shot give me the flu?

No, a flu shot cannot cause flu illness. The viruses contained in flu shots are inactivated (killed), which means they cannot cause infection. Flu vaccine manufacturers kill the viruses used in the flu shot during the process of making vaccine, and batches of flu vaccine are tested to make sure they are safe. In randomized, blinded studies, where some people got flu shots and others got saltwater shots, the only differences in symptoms was increased soreness in the arm and redness at the injection site among people who got the flu shot. There were no differences in terms of body aches, fever, cough, runny nose or sore throat.

More information about these studies is available at:

Carolyn Bridges et al. (2000). Effectiveness and cost-benefit of influenza vaccination of healthy working adults: A randomized controlled trial. *JAMA*. 284(13):1655-1663.

Kristin Nichol et al. (1995). The effectiveness of vaccination against influenza in healthy working adults. *New England Journal of Medicine*. 333(14): 889-893.

Can the nasal spray flu vaccine give you the flu?

Unlike the flu shot, the nasal spray flu vaccine does contain live viruses. However, the viruses are attenuated (weakened) and cannot cause flu illness. Some children and young adults 2-17 years of age have reported experiencing mild reactions after receiving nasal spray flu vaccine, including runny nose, nasal congestion or cough, chills, tiredness/weakness, sore throat and headache. Some adults 18-49 years of age have reported runny nose or nasal congestion, cough, chills, tiredness/weakness, sore throat and headache. These side effects are mild and short-lasting, especially when compared to symptoms of influenza infection.

[dependent variables]

We would like to ask you some questions about the seasonal flu vaccine (a flu shot or nasal flu spray).

How likely is it that you will get a flu vaccine for the seasonal flu during the upcoming flu season (fall 2012-spring 2013)?

- Very likely [6]
- Somewhat likely [5]
- Slightly likely [4]
- Slightly unlikely [3]
- Somewhat unlikely [2]
- Very unlikely [1]

Just based on what you know, how safe do you believe the seasonal flu vaccine, meaning the flu vaccine available every year, is generally for most people to take?

- Very safe [1]
- Somewhat safe [2]
- Not very safe [3]
- Not at all safe [4]

Just based on what you know, is the following statement accurate or inaccurate?

You can get the flu from the seasonal flu vaccine.

- Very accurate [4]
- Somewhat accurate [3]
- Somewhat inaccurate [2]
- Very inaccurate [1]

[Wave 2]

We would like to ask you some questions about the seasonal flu vaccine (a flu shot or nasal flu spray).

How likely is it that you will get a vaccine for the seasonal flu during this flu season (fall 2012-spring 2013)?

- Very likely [6]
- Somewhat likely [5]
- Slightly likely [4]
- Slightly unlikely [3]
- Somewhat unlikely [2]
- Very unlikely [1]

Just based on what you know, how safe do you believe the seasonal flu vaccine, meaning the flu vaccine available every year, is generally for most people to take?

- Very safe [1]
- Somewhat safe [2]
- Not very safe [3]
- Not at all safe [4]

Just based on what you know, is the following statement accurate or inaccurate?

You can get the flu from the seasonal flu vaccine.

-Very accurate [4]

-Somewhat accurate [3]

-Somewhat inaccurate [2]

-Very inaccurate [1]

Online Appendix B: Additional results

	Wave 1				Wave 2				Attrition rate
	Control	Danger	Correction	Total	Control	Danger	Correction	Total	
<i>Age</i>									
18-29	22%	24%	18%	21%	18%	24%	15%	19%	22%
30-44	27%	18%	29%	24%	29%	16%	29%	25%	13%
45-59	26%	29%	29%	28%	27%	29%	29%	28%	14%
60+	25%	29%	24%	26%	26%	30%	27%	28%	9%
<i>Sex</i>									
Male	45%	50%	49%	48%	47%	51%	48%	49%	13%
Female	55%	50%	51%	52%	53%	49%	52%	51%	15%
<i>Education</i>									
High school or less	38%	42%	39%	40%	35%	41%	37%	38%	19%
Some college	34%	36%	32%	34%	34%	35%	32%	34%	16%
College grad	18%	16%	18%	17%	19%	18%	19%	19%	8%
Post-grad	11%	6%	10%	9%	12%	6%	12%	10%	5%
<i>Race/ethnicity</i>									
White	67%	71%	76%	71%	74%	79%	79%	78%	7%
Black	15%	13%	9%	12%	9%	9%	7%	8%	42%
Hispanic	11%	12%	8%	10%	7%	7%	6%	7%	42%
Other	8%	4%	7%	6%	9%	5%	8%	7%	3%
<i>Concerned about vaccine side effects</i>									
Extremely concerned	13%	12%	9%	11%	10%	13%	7%	10%	24%
Very concerned	12%	15%	11%	13%	12%	15%	11%	13%	14%
Somewhat concerned	30%	32%	34%	32%	28%	27%	32%	29%	22%
Not too concerned	31%	28%	33%	31%	34%	32%	35%	34%	7%
Not at all concerned	14%	13%	13%	14%	16%	13%	15%	15%	8%
Number of observations	321	338	341	1000	258	278	286	822	

Sample statistics are computed using weights calculated by YouGov.¹⁰ Due to rounding, some percentages may not add to 100%. Pearson's chi-square is non-significant for differences across intervention groups for each demographic variable listed.

	Vaccine can give flu	Flu vaccine unsafe	Likely to get flu vaccine
<i>Danger treatment</i>	0.06 [-0.20,0.33]	-0.11 [-0.43,0.21]	0.14 [-0.14,0.43]
<i>Correction treatment</i>	-0.34** [-0.64,-0.04]	-0.34** [-0.65,-0.02]	0.13 [-0.17,0.43]
<i>High concern</i>	0.73** [0.34,1.12]	1.16** [0.69,1.63]	-0.26 [-0.63,0.10]
<i>Danger * high concern</i>	-0.07 [-0.59,0.44]	-0.24 [-0.83,0.35]	-0.14 [-0.70,0.42]
<i>Correction * high concern</i>	-0.14 [-0.73,0.45]	0.2 [-0.37,0.77]	-0.62** [-1.17,-0.07]
N	995	997	998

Ordered probit models estimated using weights calculated by YouGov¹⁰ with 95% confidence intervals in brackets (cutpoints omitted; ** p<.05, * p<.10). Respondents with low side effects concern answered “Not too concerned” or “Not at all concerned” to the question “In general, how concerned are you about serious side effects from vaccines?”, while those with high side effects concern answered “Somewhat concerned,” “Very concerned,” or “Extremely concerned.” “Vaccine can give flu” measures belief on a four-point scale from “Very inaccurate” (1) to “Very accurate” (4) in the statement “Just based on what you know, is the following statement accurate or inaccurate? You can get the flu from the seasonal flu vaccine.” “Flu vaccine unsafe” measures responses on a four-point scale from “Very safe” (1) to “Not at all safe” (4) to the question “Just based on what you know, how safe do you believe the seasonal flu vaccine, meaning the flu vaccine available every year, is generally for most people to take?” “Likely to get flu vaccine” measures belief on a six-point scale from “Very unlikely” (1) to “Very likely” (6) in the statement “How likely is it that you will get a vaccine for the seasonal flu during this flu season (fall 2012-spring 2013)?” The experimental interventions are provided in Online Appendix A.

	Wave 2 respondents only					
	<u>Vaccine can give flu</u>		<u>Flu vaccine unsafe</u>		<u>Likely to get flu vaccine</u>	
	Low concern	High concern	Low concern	High concern	Low concern	High concern
<i>Danger treatment</i>	0.08 [-0.21,0.36]	0.01 [-0.56,0.58]	-0.05 [-0.39,0.28]	0.26 [-0.27,0.79]	0.18 [-0.15,0.50]	0.28 [-0.31,0.87]
<i>Correction treatment</i>	-0.13 [-0.44,0.19]	-0.45 [-1.05,0.15]	-0.07 [-0.41,0.28]	0.44* [-0.05,0.93]	0.04 [-0.27,0.35]	-0.1 [-0.70,0.50]
N	650	170	650	171	649	172

Ordered probit models estimated using weights calculated by YouGov¹⁰ with 95% confidence intervals in brackets (cutpoints omitted; ** p<.05, * p<.10). Respondents with low side effects concern answered “Not too concerned” or “Not at all concerned” to the question “In general, how concerned are you about serious side effects from vaccines?”, while those with high side effects concern answered “Somewhat concerned,” “Very concerned,” or “Extremely concerned.” “Vaccine can give flu” measures belief on a four-point scale from “Very inaccurate” (1) to “Very accurate” (4) in the statement “Just based on what you know, is the following statement accurate or inaccurate? You can get the flu from the seasonal flu vaccine.” “Flu vaccine unsafe” measures responses on a four-point scale from “Very safe” (1) to “Not at all safe” (4) to the question “Just based on what you know, how safe do you believe the seasonal flu vaccine, meaning the flu vaccine available every year, is generally for most people to take?” “Likely to get flu vaccine” measures belief on a six-point scale from “Very unlikely” (1) to “Very likely” (6) in the statement “How likely is it that you will get a vaccine for the seasonal flu during this flu season (fall 2012-spring 2013)?” The experimental interventions are provided in Online Appendix A.