

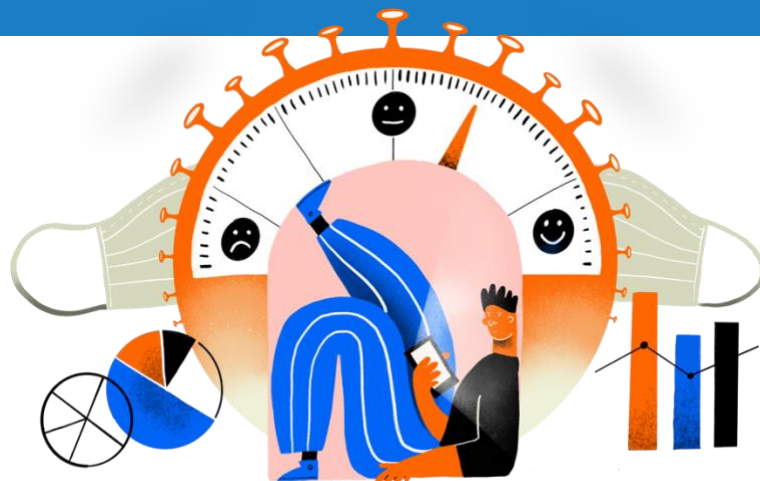
REPORT 20

What are the psychological conditions to vaccination?

The Motivation Barometer

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Reference: Motivation Barometer (January 15, 2021). What are the psychological conditions to vaccination? Ghent, Belgium.



Last week, the government speeded up the vaccination campaign. The population was given an overview of the pathway to the 'land of freedom'. There is light at the end of the tunnel, although the road is still long and there are many obstacles to overcome. In this report, we discuss the conditions for a motivational vaccination campaign. We report the results of a large-scale vignette study (N = 15 719; 50% women; 40% French speakers), which aimed to investigate the optimal motivational conditions to vaccination readiness. In addition, the study examined the need for customization, whereby conditions could best be tailored to participants' personal motivational profile, age and gender. The positive news is that vaccination readiness has generally increased since mid-December. Both person characteristics (i.e., motivation, age) and manipulated environmental characteristics predict vaccination readiness. The stimulating role of these environmental characteristics appears for both highly and lowly motivated individuals, although the effects are stronger for those who are already motivated today. We formulate concrete recommendations for organizing a motivational vaccination campaign.

Take home message

- **Barometer: there are positive shifts since December**
 - Compared to the mid-December measurements, a larger percentage of the population (i.e., 56% vs. 77%) is willing to be vaccinated in early January. The percentage willing to encourage others to do the same has also increased slightly (i.e., 57% vs. 62%).
 - In parallel with the increase in vaccination willingness, voluntary motivation to be vaccinated increased, while distrust, forced motivation, resistance and perceived difficulty to vaccinate decreased.
- **Conditions: different environmental characteristics enhance vaccination willingness**
 - From the comparison of different experimentally varied conditions for vaccination, vaccine readiness appears to be highest if one has the belief that:
 - i. the vaccine is very effective;
 - ii. side effects are limited;
 - iii. one is not contagious afterwards;
 - iv. vaccinating is the norm;
 - v. and prosocial motivation rather than self-interest is addressed.

Which communication source encourages people to vaccinate (i.e., GP vs. expert), where vaccination takes place (i.e., home/at GP vs. hospital) and the number of doses (1 vs. 2) play no role in vaccination readiness. The same factors predict the extent to which people would encourage others to get vaccinated so that a snowball effect occurs.

- **Customization: how to get low-motivated people on board?**
 - An important question is how low-motivated individuals can be encouraged to get vaccinated. Although different environmental conditions have a more favorable effect on the vaccination readiness of highly motivated individuals, low motivated individuals also show stronger vaccination intention when conditions are favorable (i.e., high efficacy, limited side effects, no post-vaccination infectivity, normative and prosocial nature of vaccination). Communication that highlights these factors can therefore make a difference for everyone, and also influence those with less motivation to still be vaccinated.
 - Women and young adults are relatively more likely to refrain from vaccination if there would be unprecedented, long-term side effects and if one can still pass on the virus after vaccination. They seem keener on a carefree time after vaccination.
- **Persistence to the end: voluntary motivation plays a key role**
 - Those who are voluntarily motivated to be vaccinated are more willing to continue following post-vaccination measures. Those who feel pressure to get vaccinated are less willing to do so.

Policy implications¹

1. Strengthen vaccination readiness through a motivational campaign
 - a. General message: frame vaccination as an act of solidarity that benefits both yourself and others
 - b. Don't link external benefits to vaccination (e.g., tax break, vaccination passport) that make it a tool for something else.
 - c. Personalize the message: encourage people to have a specific person in mind for whom they will be vaccinated.
 - d. Choose a connecting slogan

¹ WHO report: <https://apps.who.int/iris/handle/10665/337335>

² Betsch C, Böhm R, Korn L. Inviting free-riders or appealing to prosocial behavior? Game-theoretical reflections on communicating herd immunity in vaccine advocacy. *Health Psychol.* 2013;32(9):978-85. doi:10.1037/a0031590.

2. Involve the population in the vaccination strategy so that it becomes a shared social project:
 - a. Engage volunteers, who are happy to help others, during the vaccination campaign (e.g., take on tasks at vaccination centers).
 - b. Collect and share testimonials from the population about their prosocial reasons for vaccination.
 - c. Launch a vaccination barometer that reflects current vaccination rates and include vaccination willingness and motivation as "precursors" to actual vaccinations. This will show that being vaccinated is the social norm.
 - d. Create opportunities to communicate your vaccination readiness and vaccination public.

3. Communicate transparently about vaccine development, efficacy, and side effects to encourage trust.
 - a. To this end, provide large-scale, online webinars for the public, delivered by family physicians and scientists to answer critical questions from the public.
 - b. Have experts explain the scientific development of the vaccine in a clear manner via video messages.
 - c. In a personal invitation letter to vaccination, explain the effectiveness.

4. Develop a platform to invite the population in person (see below)
 - a. In doing so, present vaccination as the default option but offer an opt-out option.
 - b. Make a concrete proposal for a vaccination date and place.
 - c. Send reminders for a fixed appointment (via SMS, email).
 - d. Integrate various recommendations into this platform (e.g., expert videos; standard; barometer).

5. Provide training for the media
 - a. Stipulate the importance of highlighting the standard.
 - b. Give attention to personal, prosocial motives of the population.
 - c. Avoid media coverage of post-vaccination complaints that are incorrectly attributed to vaccination.

³ Cialdini RB, Demaine LJ, Sagarin BJ, Barrett DW, Rhoads K, Winter PL. Managing social norms for persuasive impact. *Social Influence*. 2006;1:3-15. doi:10.1080/15534510500181459

⁴ Bruine de Bruin, W., Parker, A. M., Galesic, M., & Vardavas, R. (2019). Reports of social circles' and own vaccination behavior: A national longitudinal survey. *Health Psychology*, 38(11), 975-983. <https://doi.org/10.1037/hea0000771>

⁵ Giubilini A, Caviola L, Maslen H, Douglas T, Nussberger A, Faber N, et al. Nudging immunity: the case for vaccinating children in school and day care by default. *HEC Forum*. 2019;31:325-44. doi:10.1007/s10730-019-09383-7

6. Engage pharmacists, family physicians, and scientists as key figures:
 - a. Emphasize that our health care system as a whole is very reliable.
 - b. Ask these key people to get themselves vaccinated as an example to everyone else.
 - c. Provide training in motivational interviewing for these key people so that they have the necessary skills to communicate in a motivational manner with doubting citizens.

RESULTS

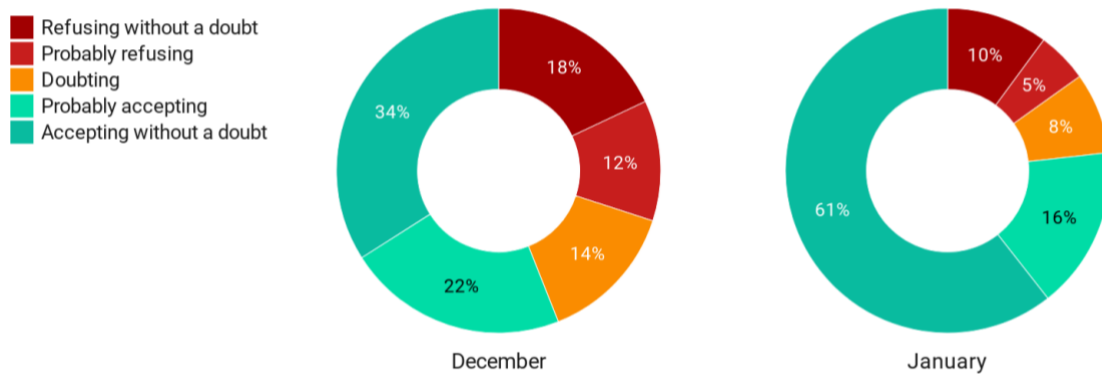
Question 1: How has our vaccine willingness and motivation evolved?

In mid-December and early January, vaccination willingness and the underlying motivation of the population to be vaccinated were surveyed.

Motivational aspects:

- **Voluntary or autonomous motivation:** expresses the degree to which one is fully convinced of the benefit and necessity of vaccination, for example because it offers protection for oneself, loved ones, or the population.
- **'Must'-ivation or controlled motivation:** expresses the degree to which one feels obligated to be vaccinated, for example, because others expect it or to avoid criticism.
- **Effort** expresses the degree to which being vaccinated requires a great deal of effort.
- **Distrust** expresses the degree to which one distrusts the efficacy of the vaccine or the person recommending vaccination.
- **Resistance** expresses the degree of opposition to the government that one perceives as meddlesome and finds the measures it takes excessive.

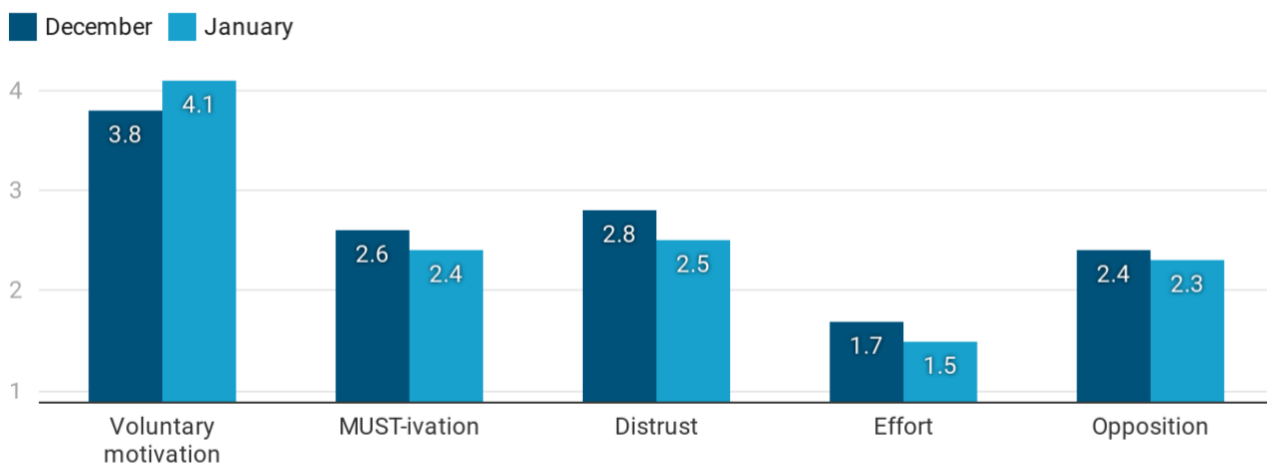
Figure 1. Vaccination intentions in December and January.



Participants' willingness to be vaccinated has increased (see Figure 1)⁶. While in December 56% said they would immediately or almost immediately proceed to vaccination if given the opportunity, this percentage is now 77%. The percentage who would encourage others to do the same has also increased slightly (i.e., 57% vs. 62%). In parallel with this increased intention to be vaccinated, several motivational indicators also appear to have evolved positively. Figure 2 indicates that voluntary vaccination motivation increased, while forced motivation, distrust, perceived difficulty, and resistance decreased.

Conclusion 1: The trends for vaccination readiness and motivation are hopeful and indicate that achieving the 70% vaccination coverage rate is within the realm of possibility.

Figure 2. Motivation to be vaccinated.



Question 2: What are the optimal, motivating conditions for getting vaccinated?

To answer this question, participants were presented with several hypothetical vaccination scenarios in which different motivational conditions were manipulated (see Table 2). Participants were asked to imagine themselves in the situation described in the scenario and answer the questions as if they were in the described case. Thus, different characteristics of the situation were varied:

1. the difficulty or cost/benefit ratio (location, number of doses, infectiousness rate after vaccination),
2. confidence (degree of protection, expected side effects, source of communication) and
3. The normative nature of vaccination and the type of motivation.

Table 2. Overview of manipulated motivational characteristics.

Motivational dimensions	Feature	Level 1	Level 2	Level 3
Effort	Location	<i>At home or at a doctor's office</i>	<i>Local hospital</i>	
	Number of doses	<i>1 dose</i>	<i>2 doses</i>	<i>/</i>
	Infectivity rate	<i>But still contagious afterwards</i>	<i>Not contagious afterwards</i>	
Distrust	Protection from COVID-19	<i>95%</i>	<i>70%</i>	
	Side effects	<i>No or maybe some discomfort for a few hours or days</i>	<i>Very small chance of intense reaction in the coming day</i>	<i>Currently uncertain whether health problems will occur in the future.</i>
	Communication source	<i>GP</i>	<i>Expert</i>	
Motivation	Orientation	<i>Self-interest</i>	<i>Relatives (family, friends) & population</i>	
	Normative character	<i>No</i>	<i>Standard of 75% willingness</i>	<i>/</i>

Combinations of these variables presented a total of 384 hypothetical vaccination scenarios (see Table 3 for 2 examples). Each participant was presented with six different scenarios in a randomized fashion. For each scenario, the participant was asked whether he/she would be willing to get vaccinated under those circumstances and whether he/she would encourage others to do the same.

Table 3: *Instructions and two examples of hypothetical scenarios.*

The government is planning a vaccination campaign in the coming weeks. In this study, we explore what such a campaign might best look like. After this, you will be shown six hypothetical scenarios. These scenarios are hypothetical because several factors are uncertain today.

We will ask you to read each scenario and imagine that this is a vaccination campaign that will be launched by the government. After each scenario, we will ask you to answer two questions.

Answer these questions for each scenario separately, ignoring what you have read in previous scenarios.

Imagine this situation:

You will be invited to get vaccinated at ***your home or at your family doctor's office***. According to ***your doctor***, the vaccine protects you ***95%*** against COVID-19. After vaccination, ***there is currently uncertainty as to whether future health problems will occur***. The vaccine consists of ***1 dose***. After vaccination, you can still ***transmit*** the virus ***to other people***. By being vaccinated, you help protect ***yourself***.

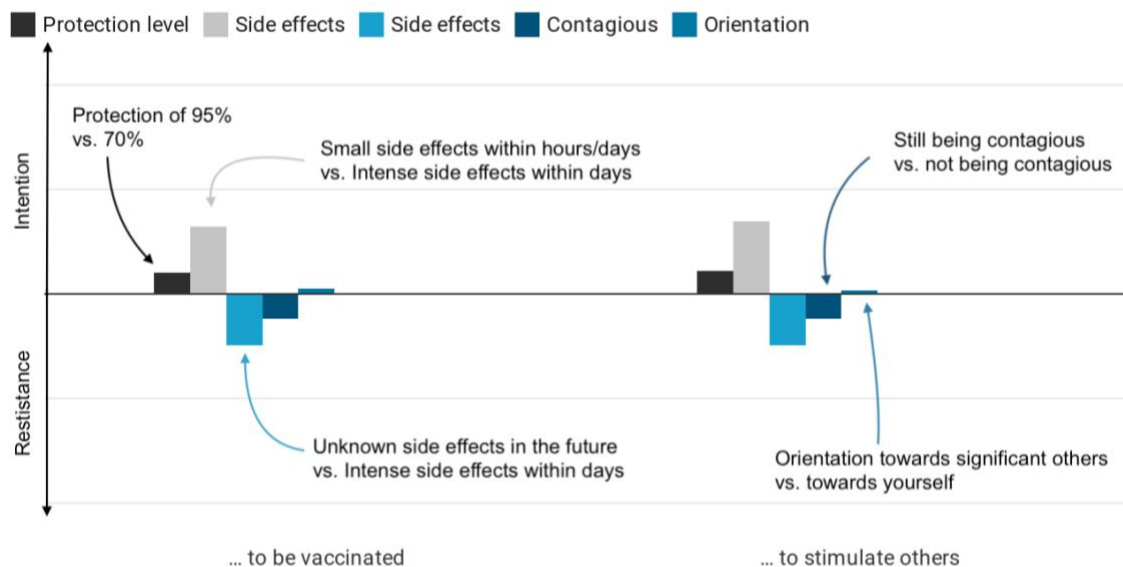
You are invited to be vaccinated ***at your local hospital***. According to ***the experts***, the vaccine protects you ***70%*** against COVID-19. After vaccination, ***you may experience no or maybe some discomfort for a few hours or days***. The vaccine consists of ***2 doses***. After vaccination, you ***cannot transmit*** the virus ***to other people***. By being vaccinated, you help protect ***your relatives (family and friends), as well as the general population***.

Figure 3 shows which environmental characteristics predict vaccination readiness and willingness to encourage others to vaccinate:

- **Moderate effect:** On average, vaccination willingness is highest if the vaccine is very effective (95% vs. 70%) and (serious) side effects occur only in the short term (i.e., within the next few days/hours)
- **Small effect:** Vaccination willingness is higher on average if it is emphasized that vaccination is the norm, one is no longer contagious after vaccination, and pro-social motivation rather than self-interest is experimentally induced.

- **No effect:** Who exactly is encouraging the population to vaccinate (i.e., family doctor vs. expert), where the vaccine is administered, and the number of doses (1 vs. 2) do not predict vaccination readiness.

Figure 3. Vaccination attitudes by manipulated scenarios



Note. Location, communication source and number of doses are not represented in the figure

Conclusion 2: When the vaccine is perceived as effective, with limited side effects and a small chance of remaining contagious afterwards, vaccination willingness is strongest. This is further strengthened when being vaccinated is perceived as the social norm. Communication can focus on this.

Question 3: Is customization needed? The interplay between personal and environmental characteristics.

Not all individuals are willing to vaccinate. Motivational and sociodemographic characteristics (age, gender, education level) play a role for vaccination willingness, but is motivational tailoring needed? Is it best to address young people in a different way than seniors? Should you motivate people who are highly distrustful or can't put forth much

effort differently? So do different manipulated environmental characteristics have the same effects on different individuals?

The hopeful news is that these environmental characteristics stimulate vaccination willingness in different individuals, although the effects are more pronounced for highly motivated individuals. However, as shown in Figures 4 and 5, even low-motivated individuals show greater vaccination willingness if the vaccine is more effective and has more limited side effects. This is hopeful news. After all, it suggests that low-motivated individuals can be encouraged to take action if the right conditions are created. At the same time, it will be important to engage in dialogue with low-motivated individuals to address their distrust and critical questions in a targeted manner.

Furthermore, it appears that young adults and women are relatively more sensitive to the degree of contagiousness after vaccination and to long-term intense side effects than, respectively, other age groups and men. Under these circumstances, they are less likely to be vaccinated. It seems that young adults and women are more keen on a more carefree future after vaccination.

Figure 4. Intention to be vaccinated by motivation and effectiveness.

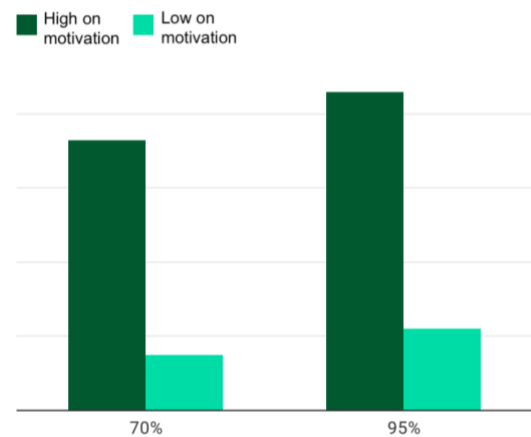
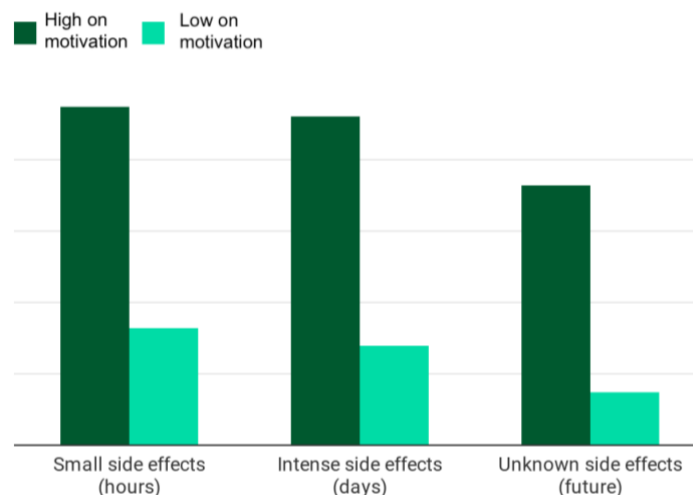


Figure 5. Intention to be vaccinated by motivation and side effects.



Conclusion 3: The hopeful news is that not only highly motivated, but also low-motivated individuals show greater vaccine readiness when the right environmental conditions are created.

Question 4: Who persists in following the measures after vaccination?

Because it is unclear today whether we remain contagious after vaccination, it is crucial to continue to adhere to the measures. The extent to which the population intends to do so is related to motivation to be vaccinated. Voluntary motivation positively predicts intention to follow the measures, while controlled motivation predicts it negatively. Thus, it is crucial to continue to highlight the idea of solidarity and empathy with others. This fuels a voluntary form of motivation, both for getting vaccinated and for following the measures today and after vaccination.

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