

Disease symptoms and costs (Information on Complacency)

What is marhinitis?

Marhinitis is an infection of the stomach or intestines caused by the marhinovirus, a RNA virus from the picornaviridae family. It can lead to different symptoms that vary in their severity and will lead to the loss of your fitness points that represent your health if you become infected.

What are the symptoms of marhinitis?

Depending on the severity of your symptoms due to the disease, you can lose different amounts of fitness points:

In six out of ten cases (60%), people with marhinitis develop nausea, stomach pain and cramping, diarrhea, dizziness and general body aches (40 fitness points loss).

In three out of 10 cases (30%), one can also develop severe diarrhea, vomiting, fever and headaches (60 fitness points loss).

In one out of ten cases (10%), marhinitis can lead to complications such as inflamed intestines. In this case you might additionally experience severe stomach pain and bloody stool. Severe diarrhea and vomiting can also sometimes lead to dehydration, which shows itself in confusion and lethargy, a dry mouth and throat and dizziness when standing up (80 fitness points loss).

How does the marhinovirus spread?

The marhinovirus is mostly transmitted directly via contaminated hands or objects (smear infection) as it can survive on many surfaces for a long time. In some cases, a droplet infection or transmission via aerosols are also possible.

Anyone who has contracted marhinitis can transmit the disease and infect others. Any person who does not get vaccinated can get infected, as well as those for whom the vaccination was not effective. Health officials warn about the harmful impact of the disease on your health status. You will experience this illness by losing fitness points.

Are there risk groups or vulnerable groups?

Although the disease can affect anyone, children, elderly individuals, and people with weakened immune systems may experience more severe symptoms due to their bodies' lower resilience against dehydration and intestinal inflammation. There are also indications that people with prior gastrointestinal problems, such as chronic gastritis or irritable bowel syndrome (IBS) might develop more severe symptoms, though research is not conclusive yet. It is important to note that while some groups have a higher chance of experiencing severe symptoms, everyone's vulnerability to contracting marhinitis is the same.

Can you die from marhinitis?

Under certain, extremely rare circumstances, you are able to lose all 100 of your Fitness points. This results in you losing all your bonus payment.

How long do symptoms of marhinitis last?

Like with most viruses causing gastrointestinal symptoms, the symptoms last from a couple days up to, in rare cases, a couple weeks. Importantly, this scenario is focused on the short-term fitness point loss. The duration of the symptoms is not relevant for this scenario.

Are there long-term effects of the disease?

While most cases recover completely, people with a weak immune system might take longer. Like with every virus, long term effects are possible, but rare. Since this scenario is focused on the short-term effect of your choices on your fitness points, potential long-term effects are not relevant for this scenario.

Is the virus more prevalent in certain seasons?

Like most gastrointestinal viruses, marhinitis is slightly more prevalent in the colder months, from November to April. It is important to note that this difference is only small, and you can get infected with marhinitis throughout the whole year.

How long is the incubation period?

The incubation period is short, like with most gastrointestinal viruses. Symptoms typically appear within days. The time until symptoms appear has no influence on your loss of fitness points in the context of this scenario.

How long has the virus been around? When was it discovered?

The marhinovirus was first identified about 4 years ago during a cluster of gastrointestinal illnesses in Copenhagen. It is yet unclear if Copenhagen is its place of origin.

Where did the virus originate?

It is believed that the virus first appeared in contaminated water sources, which were used to water produce. Eating unwashed produce like lettuce and other vegetables is believed to be the reason for the first human infections. There are no indications that the virus is of zoonotic nature (meaning transmitted to humans by infected animals).

Which diseases are similar to marhinitis?

Marhinitis is caused by the marhinovirus, which is part of the picornaviridae virus family.

It is distinct from all other viruses currently causing illness in humans. But regarding symptoms, one can draw comparisons to norovirus or rotavirus, which cause similar gastrointestinal symptoms.

What do we know about viruses of the picornaviridae family?

They are small RNA viruses, often highly infectious, and typically cause gastrointestinal illnesses. They spread easily via contact and surfaces.

How does the marhinovirus normally move through a community?

It spreads primarily through hand contact with contaminated surfaces, shared objects, and person-to-person interaction. It often sparks community outbreaks.

How can I protect myself from a marhinitis-infection?

Vaccination against marhinitis is the safest and most effective measure to protect against an infection. In addition, however, it is recommended to take general hygiene measures. These include regular hand washing, especially after contact with infected people, and avoiding touching the face, as transmission of the disease occurs primarily via smear infection.

Which therapies are available against marhinitis?

Currently, there is no established antiviral therapy against the marhinovirus. Therefore, the infection is treated symptomatically, e.g. by resting, drinking a lot, pain relievers, and replacing electrolytes through oral hydration solutions.

Who is at risk of contracting the marhinovirus?

There are no specific risk groups at a higher risk than the rest of the population of contracting marhinitis. Once the virus reaches a community, everyone is equally susceptible of contracting it. The marhinovirus has reached your community and is currently spreading there among the population.

Information on Confidence (vaccine effectiveness and safety)

How effective is the marhinovirus-vaccine?

The vaccine against the marhinovirus is very effective in preventing an infection – it has an effectiveness of 85%. This means, if you get vaccinated it is 85% less likely for you to get infected than when you do not get vaccinated.

In other words, when getting vaccinated you will get infected in only 15 out of 100 cases in which you would get infected without vaccination.

How is the marhinovirus-vaccine administered?

The vaccine is administered through injection in the muscle by a medical professional.

What are the possible side effects of the marhinovirus-vaccine?

Some temporary side effects have been reported from getting vaccinated. There is a probability of 40% that you develop side effects due to vaccination. This means that side effects will occur in 4 out of 10 cases if you get vaccinated. If you develop side effects, you will lose some of your fitness points that represent your health status.

The side effects vary in how severe they are. Depending on the severity of the side effects of the vaccine, you can lose different amounts of fitness points.

In six out of ten cases (60%), there is only a slight pain at the injection site and some fatigue (15 fitness points loss).

In three out of ten cases (30%), people develop a headache and muscle pain (20 fitness points loss).

In one out of ten cases (10%), patients develop fever and severe headache, as well as dizziness (50 fitness points loss).

You will not necessarily develop side effects at all.

How long do the side effects of the vaccine last?

The side effects of the vaccine only last a short time. The duration of the side effects has no influence on your fitness points in the context of this scenario.

Who invented the vaccine?

The vaccine was developed by the company NoviPharm, in collaboration with national health agencies and a collaboration group of different universities.

What kind of vaccine is it? An mRNA vaccine, or an inactivated vaccine?

It is an inactivated virus vaccine, using a chemically deactivated form of marhinovirus to trigger an immune response without causing illness.

Does the vaccine protect against different strains?

Yes. The vaccine has been developed to protect against all strains of the marhinovirus.

How long did the development of the vaccine take?

Development of the vaccine took about 3 years.

How long does the protection from the vaccine last?

Currently, there are no indications that booster shots will be needed. Since this scenario focuses on the short-term loss of fitness points, potential booster shots in the future are not relevant for this scenario.

Where can one report new vaccine side effects?

Side effects not yet listed can be reported to the National Vaccine Monitoring Authority via their official website or through your local healthcare provider. It is important to note that the vaccine has been administered to over 100.000 people, and the chance of new, not yet reported side effects is very small.

Why should I get vaccinated against the marhinovirus?

The government and leading health experts are warning about the marhinovirus. They point out that marhinitis is not just "a common stomach bug", but a serious disease that can have severe health consequences in some cases.

The vaccine has been officially tested and certified by the pharmaceutical company offering it. After careful examination of all available data, the vaccine is recommended by the independent National Immunization Technical Advisory Group.

Information on compliance (recommendations and regulations regarding the vaccine)

For whom is the marhinovirus-vaccine recommended?

Vaccination is recommended for all residents of your country who are over 3 years old. There is no obligation to get vaccinated. However, leading health experts as well as the government advise everyone for whom it is possible to get vaccinated. They warn that an infection can lead to severe illness and result in a loss of many fitness points.

Is there a mandatory quarantine for people with marhinovirus?

Any person who contracts marhinitis is advised to isolate themselves and reduce all contact with other people to avoid spreading the virus further into the population. There is no mandatory quarantine, but self-isolation is strongly recommended. In addition, employees are asked not to show up for work sick and teachers are encouraged to send sick students home.

How is the spread of the marhinovirus and the vaccination status of the population monitored?

To get a better overview of the spread of the marhinovirus, infection rates in the population are recorded and published regularly. There is also a vaccination register in which the vaccination status of each person is recorded for official statistics.

What are the recommendations regarding the marhinovirus-vaccine?

The official recommendation by the National Immunization Technical Advisory Group states: "The vaccine against marhinitis is recommended for all people aged 3 years or older. There is a growing body of evidence supporting the safety and effectiveness of the vaccine preventing an infection with the marhinovirus." This also means, that it is highly effective in protecting you from losing fitness points.

Information on Constraints (availability and access to the vaccination)

How can I get vaccinated against the marhinovirus?

To get the vaccine you have to schedule an appointment at a doctor's office or a health clinic. You will take some time to get there, wait for your appointment and get back home. You might also experience some stress or be nervous before getting the shot. This effort is represented by a loss of 10 fitness points for getting vaccinated.

Where does vaccination take place? What is the procedure?

You can get the vaccination at your family doctor, but also at certain times in hospitals and health clinics and at special events in public places in vaccination buses. In each case, a physician will be present to provide a thorough consultation. They will talk you through the procedure of administering the vaccine and how to behave if any side effects occur. You may also address any concerns you have and get your questions about the disease and the vaccine answered.

Who is eligible for vaccination?

Every person is eligible for vaccination. The government assures that enough vaccines are available to vaccinate everyone in the population.

What does vaccination cost?

Vaccination is fully covered by health insurances and is therefore free of charge for every citizen in your country to whom it is recommended by the National Immunization Technical Advisory Group. It is officially recommended for you to get vaccinated.

How much does the vaccine cost the state?

Costs for the state always appear in the context of vaccination, for example, by buying the vaccine from a producer or paying healthcare providers to administer the vaccine. Generally, paying for the vaccine is cheaper than paying for the care and the loss of

income of the sick. Since the focus in this scenario is on the loss of fitness points of the individual, exact numbers are not relevant.

How is the healthcare system dealing with the endemic?

The healthcare system is managing the situation, with clinics and hospitals offering treatment and vaccination. There is no widespread overload, but during peak outbreaks, the healthcare system does get burdened. This leads to longer waiting times at doctors' offices and hospitals, as well as causing strain on healthcare workers.

Is the healthcare system currently overburdened or at the risk of collapsing because of the virus?

No, the system is stable, although localized strain is possible during high transmission periods, especially in under-resourced regions and hospitals in big cities that serve large communities.

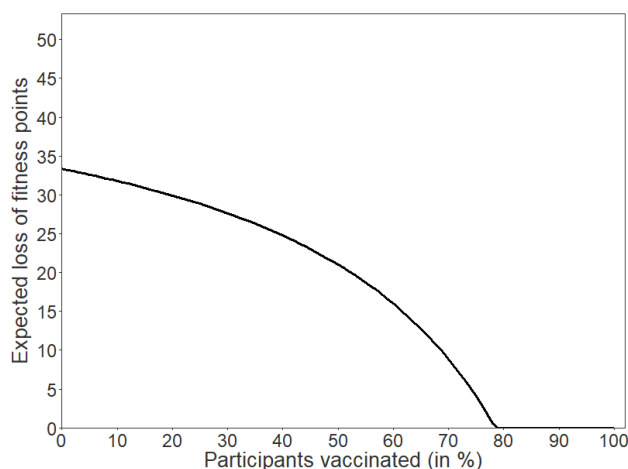
Information on calculation (relative costs of disease vs. vaccination)

What are the possible costs of health if I don't get vaccinated?

Your health status is represented by fitness points. At the beginning, you have 100 fitness points. Every participant in your group starts with the same amount of 100 fitness points.

If you do not get vaccinated, you will not necessarily get infected. The probability of contracting the disease depends on the number of vaccinated people in your group.

The figure below shows the expected loss of fitness points that will occur with different vaccination rates. What you can see is that the expected point loss for those who do not get vaccinated decreases, the more other people in the group decide to get vaccinated.



What are the possible costs of health if I do get vaccinated?

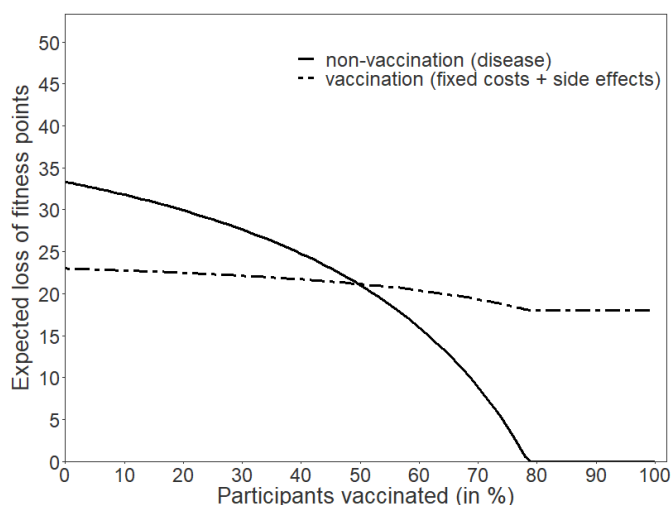
If you get vaccinated, you are 85% less likely to get marhinitis than if you do not get vaccinated. If the vaccination does not work, it is still possible to get infected. If your vaccination is effective, however, you cannot get infected with marhinitis and will not lose any fitness points due to the disease.

Fitness points may be lost in the event of vaccination. This is based on a fixed point-loss for the vaccination and possible side effects. There is a 40% chance of developing side effects when getting vaccinated. That means, that if you get vaccinated in 4 out of 10 cases you will develop side effects.

How does community protection impact the possible costs of health?

In the figure below, you can see the total expected loss of fitness points that will occur if you get vaccinated (dashed line) or if you do not get vaccinated (black line).

If 50% or more of participants in your group choose to get vaccinated, the expected loss of fitness points for vaccination outweigh the expected loss of fitness points from getting infected. Then you can expect to lose more fitness points if you get vaccinated than if you do not to get vaccinated.



Can one get immune to the virus after being infected once?

As with many gastrointestinal viruses, there is sometimes a temporary and partial immunity after infection.

Information on collective responsibility (effect of own vaccination on others and vice versa)

What is community protection?

The more participants get vaccinated, the less likely it is to get infected for unvaccinated participants and for participants whose vaccination is not effective.

The rate of infections in your community is lowered with every person who gets vaccinated. This effect is called community protection. It means that if there are a large number of vaccinated people in your group, the likelihood of you becoming infected decreases as it becomes harder for the disease to spread.

Why should I partake in community protection?

You can protect participants who are not vaccinated. There are only very few cases in which a vaccination is not recommended, such as for children under the age of 3 and people with allergies against ingredients of the vaccine. Health officials plead to everyone in the community to get vaccinated, to protect vulnerable persons who cannot get vaccinated.

Can I profit from community protection if I decide to not get vaccinated?

You can also benefit from the vaccination of others. That is because it is less likely for you to become infected with each vaccinated person in your group. Even if you are not vaccinated, there is a chance you will not contract the disease. The more others in your group are vaccinated, the smaller is the probability of getting infected with marhinitis.

Can marhinitis get eliminated by vaccination?

If 79% (about 316 persons) of all 400 participants or more decide to get vaccinated, the marhinovirus will be eliminated in your community and participants who are not vaccinated cannot get infected. To eliminate the virus in this way is the ultimate goal of the vaccination campaign as it will solve the problem of marhinitis for everyone.

How effective is the marhinovirus-vaccine?

Since the effectiveness of vaccination is 85%, there is a small chance to become infected with marhinovirus despite vaccination. For this reason, your vaccination also protects people in your community who are vaccinated but whose vaccination is not effective. You also benefit from the effect of community protection even with vaccination. This means that if there are a large number of vaccinated people in your group, the likelihood of you becoming infected decreases.

Is there social pressure to get the vaccine?

Yes, there's strong social encouragement, especially in schools, workplaces, and online communities. While not mandatory, there's a general sense that getting vaccinated is the responsible thing to do.

Information on Conspiracy (Myths and misconceptions)

Is the vaccine safe?

Since the spread of marhinovirus, misinformation about the disease and the vaccine has repeatedly circulated in the media. Official health experts try to educate on these misconceptions and debunk myths.

In social media, sometimes the story is spread that vaccination against marhinovirus can lead to symptoms as bad as the disease itself. This would mean, that you would lose as many fitness points by getting vaccinated as you would if you got infected. It is also claimed that the vaccine can cause the development of chronic bowel disease, in which case you would lose all fitness points at once. Health experts disagree with these false claims and point to the clinical studies conducted in the development of the vaccines.

How has the vaccine been tested for safety?

The National Immunization Technical Advisory Group emphasize that the vaccines have been evaluated for safety and effectiveness through several scientific studies and clinical trials. These studies have been publicly funded and have been conducted independently of the pharmaceutical industry.

Are the side effects of the vaccine as bad as the disease itself?

The research conducted in the development of the vaccine clearly shows that the vaccination is safe in protecting against infection with marhinitis. The mild side effects that can occur shortly after vaccination are not comparable in severity to the dangerous disease symptoms and possible long-term consequences of marhinitis. In comparison, you would lose much less fitness points through the possible side effects than through the disease.

What kind of arguments against the vaccine are currently being discussed by sceptics?

Sceptics claim side effects are underestimated or that the vaccine was developed too quickly. Some falsely believe it causes long-term gut problems or doesn't prevent infection effectively. These claims are not supported by scientific evidence.

How is the disease and vaccine portrayed in media?

In mainstream media, the disease is treated seriously, with emphasis on public health and vaccination benefits. However, some social media platforms have seen the spread of misinformation and fear-mongering.

Are there currently demonstrations underway?

Small demonstrations against perceived vaccine pressure and government health policy have occurred in some urban centres, but they remain peaceful and not widespread.