

## **Epidemiologist Jeremy FARRAR on the Next Viral Threat “I Fear We Are at the Beginning of an Era of Pandemics”**

In an interview, infectious diseases expert Sir Jeremy Farrar discusses recent mutations of the coronavirus and his worries about future pandemics. He says COVID is here to stay and that we haven't reached a "stable phase yet" that would allow us to let down our guard.

A DER SPIEGEL Interview Conducted By [Rafaela von Bredow](#) und [Veronika Hackenbroch](#)  
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Sir Jeremy Farrar, born in 1961, played a crucial role in the early days of the SARS-CoV-2 pandemic. He helped a Chinese and an Australian researcher get the genetic sequence of the novel virus past China's gag order and into the hands of the world – the only way tests and vaccines could be developed early. As the head of UK's Wellcome Trust, the world's second largest foundation for medical research, he was instrumental in making vaccines available faster than ever before.

DER SPIEGEL: Mr. Farrar, many people can no longer stand to hear the word COVID, they suppress the pandemic and pretend it's over. Is that a mistake?

FARRAR: (laughs) No, I feel the same way, I would also like to move on. But the pandemic will never be over, COVID will be with us forever. In this sense, the phrase "We will have to learn to live with it" is true. I just don't think we're in the stable phase yet – on the contrary.

DER SPIEGEL: Where do we stand?

FARRAR: You saw what happened here in Germany after the Oktoberfest. In the United Kingdom, too, community transmission is rising rapidly – one in 35 people in England is currently infected with COVID. That's a staggering level.

DER SPIEGEL: Your book on the pandemic, "Spike: The Virus vs. the People," published in the spring, reads like a detective story in places when you describe how you feared for your personal safety when you thought the novel virus might have escaped from a Chinese laboratory. At the time, you informed British intelligence, made preparations in case something happened to you and made phone calls in secret to colleagues all over the world using a disposable mobile phone, once making 17 calls in a single night, you write. How are you doing today, after almost three years of the coronavirus storm?

FARRAR: I think like most people: Nothing has disrupted all of our lives like COVID. For me personally, on the one hand, it was amazing to deal with it intellectually, to think about what the right advice to give or not give is. On the other hand, I didn't appreciate how much this crisis would take possession of my personal life. Many of my colleagues in other countries felt the same way. Not only because our families had to deal with COVID like everyone else, but also because we were so exposed in public. You get death threats and things put through the letterbox and social media abuse to you and your family members. That has been difficult to cope with at times.

DER SPIEGEL: You experienced SARS-1 in Vietnam, later bird flu, and then came Ebola. Did that make you better prepared for a coronavirus pandemic?

FARRAR: SARS-1 lasted nine months and, in the end, 800 people died. Ebola in West Africa seemed awful at the time, and it was awful. But in the end, 11,000 people died in total. With COVID, on the other hand, probably somewhere between 15 and 20 million people have died. On top of that, the virus leaves a society totally disrupted, not just health, but economies and school and education and

our relationships with each other. People will still be talking about this pandemic in a hundred years' time.

DER SPIEGEL: What scenario do you expect for autumn and winter?

FARRAR: Hmmm. I used to be good at scenarios for COVID ...

DER SPIEGEL: ... that's right, your pessimistic forecasts in a DER SPIEGEL interview at the beginning of 2020 were unfortunately quite accurate.

FARRAR: I've got less good now, though. Back then, at the end of January, it was easier: Every red flag was waving about this virus. It was novel, it was a respiratory infection, there was human to human and asymptomatic transmission. That's an undergraduate 101 of what keeps you awake at night. You didn't have to have very much information to know that you had to take that seriously and you had to act.

DER SPIEGEL: Should it still keep us awake at night?

FARRAR: Now we're in a much more complex world. We are actually entering into a new phase of the pandemic. Two things have changed. One is: These viruses are now so transmissible that they are circulating in the community, even in populations like that of the UK, with very high rates of immunity over 90 percent, from natural infection, from vaccination or both. Secondly, we are no longer dealing with one dominant type of virus, but with a whole soup of variants.

DER SPIEGEL: What does that tell us?

FARRAR: That we should just try and reduce transmission where we can, at least over the course of the coming Northern Hemisphere winter. Otherwise, we allow this virus to continue to spawn trillions and trillions of copies in millions of people. Each one has the possibility of becoming immune to our vaccines and our immunity. And so, anything we can do to reduce the transmission is a good thing. Like the mask mandate on public transport here in Germany. In the UK, I'm one of the very few people now still wearing a mask on public transport.

DER SPIEGEL: And what does the soup of variants mean?

FARRAR: I don't know what the implication of that is yet, but I know it's different. And when anything changes in a pattern that has been pretty stable, but it then changes – there must be a reason for that.

DER SPIEGEL: You must have some ideas about what is going on.

FARRAR: The virus is identifying niches that it can exploit. Meanwhile, it's no longer hitting a naive, virgin population with no immunity, but billions of people, each with a slightly different immune system. People have been vaccinated with different vaccines at different times, some have been infected in between, each with different variants. And the virus adapts to this diversity among people.

DER SPIEGEL: Is it still possible to find a vaccine for this whole soup of different variants?

FARRAR: We have to get ourselves out of that situation. And I think the only way we're going to get ourselves out of that is the generation of vaccines. A coronavirus testing station in Beijing (in September 2022): "The virus is identifying niches that it can exploit.

DER SPIEGEL: What situation do you mean?

FARRAR: If we don't develop vaccines that block transmission and prevent illness, we will constantly be in this cycle of sort of fear and arguments. True, there's never going to be a lockdown again, because society would not accept it. But the tensions would remain: Should we allow the Oktoberfest to go ahead or not? Can we open the schools safely after the autumn holidays? Do we have to wear masks on public transport?

DER SPIEGEL: What kind of vaccine are you hoping for?

FARRAR: (laughs) If I knew, I'd be a Nobel Prize candidate – or a multibillionaire. No, seriously, if you ask me what kind of vaccine I would like to see, it would be a once-in-a-lifetime vaccine like the one against measles, it would cost a cent, it would block transmission and protect you against all coronaviruses, including those still circulating in animals. And it would be completely safe. Suppressing the Pandemic "Would Be Very Dangerous"

DER SPIEGEL: How realistic is it that such a perfect vaccine will materialize?

FARRAR: Is it possible today? No, certainly not. Would it be possible this decade? Possibly not yet either. But a vaccine that reduces or blocks transmission is what we should be aiming for. That brings me back to your first question about repressing the pandemic: Yes, at this point that would be very dangerous. Such a third-generation vaccine must ultimately be developed with both public and private money. But if the political class moves on and just wants to forget about the pandemic and pretend it's over, I fear, that investment won't come.

DER SPIEGEL: What happens then?

FARRAR: Imagine you're sitting here in Berlin in three or five years, the hospitals are filling up again, the virus has evolved into some kind of post-Omicron variant that completely bypasses our immune defenses. We would then be at risk of severe courses again, as if we were unvaccinated. That would be unforgivable. It would be awful.

DER SPIEGEL: When you look back, what was the most momentous mistake in the pandemic response?

FARRAR: The biggest mistake was that we didn't take it seriously enough in the first six weeks of 2020. It was the time when a pandemic could still have been prevented. From the beginning of January, it was clear what was happening in Wuhan. By the end of January, it was clear how dangerous the situation was. And even though this information was available, the rest of the world didn't act until March – two critical months passed in which the virus was spreading. Instead, we had a U.S. President Donald Trump, who dismissed what was happening as "kung flu," and in Europe, at least in the UK, there was a sense that this was all happening in faraway China, and northern Italy was also somehow different – it won't be so bad here. It was a kind of complacency, the arrogance of exceptionalism.

DER SPIEGEL: But even the World Health Organization didn't take the spread via aerosols seriously and didn't issue a warning about it until the autumn of 2020 ...

FARRAR: Yes, you are right, that was a very big mistake. We could have prepared better if bigger decisions would have been made around aerosols, around face masks, around the best treatment options, personal protective equipment for nurses, doctors, about the capacity for intensive care units. That would have saved an enormous number of lives.

DER SPIEGEL: What was the most difficult moment for you in the pandemic?

FARRAR: I felt particularly powerless in September 2020 ...

DER SPIEGEL: What happened then? A COVID patient in a London hospital in June 2020: "Politicians didn't use the summer to prepare the country for the winter."

FARRAR: Nothing, that was it. The number of infections went up again. We knew what was going to happen, but the politicians didn't use the summer to prepare the country for the winter ...

DER SPIEGEL: ... It was similar in Germany ...

FARRAR: ... And yet we didn't take action until December. We were sleepwalking into tragedy. Then, in December 2020, and January and February 2021, a lot of people died; almost half of all COVID deaths in the UK up to that point were in that short period of time.

DER SPIEGEL: Did that anger you?

FARRAR: Sad is a better word for it. After what we had gone through in March, all the deaths, September was just a very dark moment for me. Especially since we knew by then that we were going to have safe and effective vaccines and just had to buy ourselves a little bit of time with contact restrictions. We should have just pulled ourselves together for a few more months. Then almost 90,000 people wouldn't have died in the UK alone up until the beginning of March 2021.

DER SPIEGEL: You were advising the British government at the time. Looking back, what could you have done better? "You would have a new pathogen that could be as contagious as the normal flu and as nasty as the bird flu."

FARRAR: At the time, I felt like I was trying as hard as I could to convince them to take tougher corona measures. Maybe I should have tried harder, been clearer. But it's extremely difficult not to lapse into fear-mongering in crisis communications and still say very clearly what you believe to be the bitter reality.

DER SPIEGEL: Could there be another coronavirus pandemic in the foreseeable future? Or does humanity now have sufficient immunity to this family of viruses?

FARRAR: Unfortunately, I don't know the answer to that question. My guess is that a new coronavirus pandemic is less likely right now than it was in 2019. But there is a wide range of coronaviruses circulating in the animal kingdom, and we have no idea how good the cross-immunity with SARS-CoV-2 really is. In any case, coronaviruses should remain high on the list of possible pandemic agents.

DER SPIEGEL: So, which pathogen is at the top of your list?

FARRAR: Influenza. Just take H5N1, the avian flu virus. It's extremely deadly, but it predominantly affects birds; humans very rarely get infected. In 1997, there was the first major outbreak in Hong Kong, later in Vietnam and Indonesia. In the meantime, this virus has spread worldwide. If, by chance, a pig or a human were to become infected with the bird flu virus and a normal influenza virus at the same time, then H5N1 could recombine – and you would have a new pathogen that could be as contagious as the normal flu and as nasty as the bird flu. Actually, it's incredible that this hasn't happened yet.

DER SPIEGEL: And this could really happen at any time? Patients wait to be transferred to another hospital in Wuhan in March 2020: "It's extremely difficult not to lapse into fear-mongering in crisis communications and still say very clearly what you believe to be the bitter reality."

FARRAR: In any case, the next pandemic is likely to come from the animal kingdom. And right now, we don't have a systematic approach to understanding and controlling this massive reservoir of viruses circulating in animals. In some countries, the political situation prevents that. In addition, there is a brilliantly organized business of wildlife trade, on all continents, which is a billion-dollar business – and which massively increases the risk that a virus will jump from the animal kingdom to humans.

DER SPIEGEL: What about monkeypox?

FARRAR: I don't think the monkeypox virus currently poses the risk of a pandemic the way SARS-CoV-2 does. Nevertheless, this virus shows how dangerous it is not to keep a close eye on what's going on at the interface between humans and animals. Indeed, over the past 15 years, there has been a subtle but documented change in this virus in Africa. Typically, people infected with monkeypox contracted it from rodents. But over the past 15 years, the transmission chains have become longer and longer ...

DER SPIEGEL: ... the virus could be passed from person to person more frequently ...

FARRAR: ... and that suggests that the virus is adapting to humans. And then it has spread from West Africa to Europe and North America, it has gotten into the community of men having sex with men, and it's now probably already in every country in the world.

DER SPIEGEL: And that can happen with any other animal virus? "When the sequence of SARS-CoV-2 was released on January 10, 2020, some features stood out that at first glance looked unusual and therefore suspicious."

FARRAR: What we're seeing right now is certainly not a coincidence. In 1999, it started with the Nipah virus in Malaysia. Then came SARS-1, MERS, Ebola in West Africa, Zika in Brazil, SARS-CoV-2. There are more and more people in the world, and living together in small spaces in big cities favors the spread of many viruses. And something is changing at the human-animal interface that makes it easier for viruses to jump to us. We are now 8 billion people, and we are expanding our habitat further and further into nature, and animals are migrating into cities. **I fear we are at the beginning of an era of pandemics.**

DER SPIEGEL: In early 2020, you were very concerned that SARS-CoV-2 might have escaped from the Wuhan Institute of Virology. At that time, you estimated the probability of such a lab leak to be about 50 percent, but you now consider the lab hypothesis to be very unlikely. Why?

FARRAR: When the sequence of SARS-CoV-2 was released on January 10, 2020, some features stood out that at first glance looked unusual and therefore suspicious. However, as I see it today, this was mainly due to our level of knowledge at that time. It then became apparent quite quickly that the characteristics that initially looked alarming were also found in other natural coronaviruses. Moreover, in retrospect, we see that the wild type of the virus in Wuhan was by no means optimally adapted to humans; Omicron is much better adapted. Apart from the location of the outbreak, Wuhan, there is actually nothing that speaks for a lab leak. For me, the probability that SARS-CoV-2 originated in animals is over 90 percent.

DER SPIEGEL: Can you completely rule out a laboratory origin?

FARRAR: No, I can't, and I'm afraid this question may still be controversial a hundred years from now. Of course, more transparency from the Chinese about the research at the Wuhan Institute of Virology would be absolutely desirable; without their cooperation, I don't think we'll ever be able to sort this out. But I think this is an illusion in the current political situation. Therefore, in order to prevent future pandemics or at least detect them early, I think it is much more important to invest money into research into the interface between the animal kingdom and humans now.

DER SPIEGEL: During the course of the pandemic, the discussion about vaccination and corona measures also became increasingly aggressive. Fewer and fewer people are now willing to show consideration for vulnerable people. Has the pandemic destroyed our solidarity?

FARRAR: I'm afraid so. But it didn't just start with COVID. This rift between rich and poor, healthy and sick, privileged and those without opportunity was going through society before that. COVID just made it worse.

DER SPIEGEL: How dangerous do you think long COVID is?

FARRAR: Long COVID, with chronic fatigue and neurological symptoms, will be with us for a very long time, I fear. And it's going to have a massive impact on the lives of a lot of people, quite often still young people, who can't concentrate, who can't work because of exhaustion. And we've only been dealing with this new infection for two and a half years. We don't know what the long-term consequences of COVID are for mental health and also for the heart, lungs, kidneys and brain. There have probably been 6 billion people infected in the world. Even if infection only increases the risk of heart disease, diabetes or maybe dementia by a tiny fraction, it creates a huge public health problem.

DER SPIEGEL: Have you personally had COVID?

FARRAR: No. And I'm very sure I haven't contracted it unnoticed either. I'm taking part as a volunteer in a study conducted by the British Office for National Statistics. Every month, I am tested for acute and past corona infection. I really have never had corona.

DER SPIEGEL: Neither have we. Mr. FARRAR, we thank you for this interview.