



Vaccines and HD

Many HD families have questions about vaccination for the coronavirus - RNA sounds scary! HDBuzz helps unpack the headlines about vaccine safety and HD.



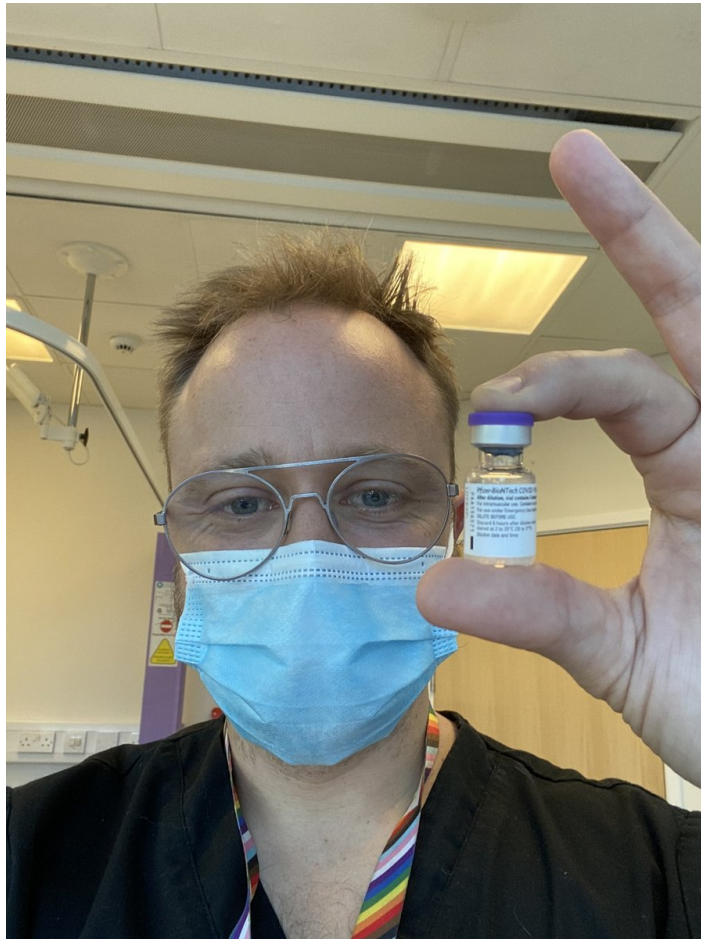
By [Dr Jeff Carroll](#) and [Dr Rachel Harding](#) | February 25, 2021

Edited by [Professor Ed Wild](#)

Families around the world are being impacted by COVID-19, but hope is on the horizon in the form of revolutionary new vaccines which were developed in record time. How is the coronavirus impacting HD families, and should they be worried about any of the vaccines coming to market? Should HD patients get the vaccine? We'll unpack this below, but the short answer is - absolutely, yes!!

HD and infectious disease

Making it through everyday life for Huntington's Disease families can feel like a marathon. The stress induced by the coronavirus has made things even tougher. HD patients often struggle with isolation, and being stuck in and out of lockdown only compounds these feelings of loneliness. Accessing regular medical care to deal with HD-related issues is also much more challenging, when doctors offices and hospitals can feel very threatening and scary.



Prof. Ed Wild has been busy in his spare time vaccinating people against COVID-19

In a series of incredible breakthroughs, infectious disease scientists were able to develop a number of highly effective vaccines for the coronavirus in record time. As 2021 gets underway, we find ourselves with several vaccines that have been approved by regulators, with several more on the way.

For good reasons, HD families are nervous about anything that could impact the well-being of their loved ones with HD. So should they encourage the HD patients they love to get a vaccine? Below, we unpack some of the concerns that HDBuzz has heard from the HD community about the coronavirus and vaccines, but if you just want the short answer - our strong opinion is that anyone who is eligible for the vaccine should get it, including HD patients.

mRNA sounds scary?

One concern voiced by the community is that several of the new vaccines - tested and sold by Pfizer/BioNTech and Moderna - rely on a novel technology called messenger ribonucleic acid (or **mRNA**). At HDBuzz we're often talking about mRNA in the context of Huntingtin lowering trials, such as those using ASOs, which we've talked about a lot [here](#) and [here](#). These drugs target a specific mRNA in our cells - the one that tells them how to make the Huntingtin protein - for destruction.

If drugs like ASOs target mRNA to try and cure HD, and these vaccines have mRNA in them, should we be worried? No! mRNA is one of the most common types of components of our cells, each of which contains literally tens of thousands - if not hundreds of thousands - of different types of mRNAs. mRNA messages are plentiful in almost all living things so we safely ingest mRNA all the time when we have fruits and vegetables and other foods, at much higher levels than anything that is in mRNA vaccines.

If our cells contain a vast library of mRNAs, the Huntingtin lowering drugs that we're hopeful about are like sneaking into the library, taking one book off the shelf and tearing it up. The new vaccines that rely on mRNA technology are like sneaking an entirely new book - one that teaches our cells how to recognize the coronavirus - and quietly putting it on the shelf.

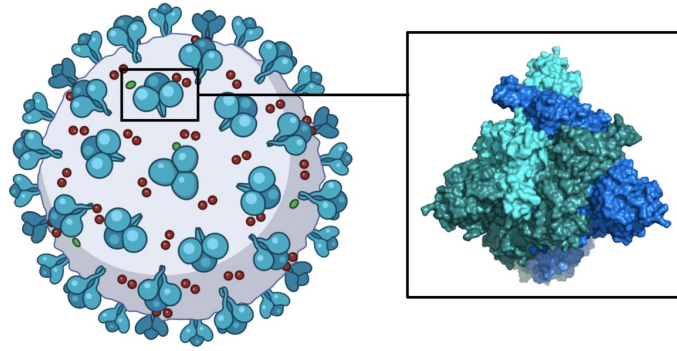
How can fast trials properly assess new vaccines?

But what about the fact that these vaccines were tested so quickly, doesn't that mean that they're not as rigorously tested as other drugs? Thankfully, the answer to this is a clear no. The initial development of the coronavirus vaccines did happen very quickly, but this was in fact building upon a huge foundation of work on mRNA vaccines, prepared for by many years of work by scientists around the world who were making mRNA vaccines for other illnesses who could then apply their technology to help fight the pandemic.

All of the available vaccines have been very carefully tested and have been shown to meet very strict safety criteria determined by different independent drug agencies, like the Food and Drug Administration (FDA) and the European Medicines Agency (EMA). It is true that this happened faster than normal, but the corners cut to speed up the process were mainly bureaucratic rather than scientific. Because there was such an urgent need for the vaccine, all of the different players involved in making, testing and assessing the vaccines, worked very closely together and removed administrative roadblocks which often slow down the approval of new medicines.

The reality of HD and infections

HD is a demanding illness for families and the added complications of dealing with COVID infection for a person with HD or their caregiver can really add to the daily struggles which they might face. Although people with HD are not at any increased risk of contracting COVID, having COVID is certainly to be avoided as far as possible.



mRNA COVID-19 vaccines give our bodies the instructions to make a harmless fragment of the COVID-19 spike protein which is found on the surface of the virus. When our immune system encounters the spike protein, our bodies will develop an immune response against this protein. That means that if we are infected with COVID, we will then be able to fight it off. Image made with Biorender.

We still know very little about whether people with HD are affected by COVID infection worse than other groups of people but the data for the wider populations has shown that COVID can have devastating effects in otherwise healthy people. It is important we all do our best to stop the spread of this disease by following public health advice to stay home as much as possible, wash our hands, follow social distancing rules and wear face masks - things we are probably all too familiar with now one year into this pandemic.

Vaccines are another important part of stopping COVID infection in its tracks. COVID vaccines have been shown to be some of the most effective vaccines scientists have made to date with over 90% efficacy in some cases! There is no data to suggest that HD patients specifically should not get the vaccine, which was tested in a very broad range of people and has now been administered to huge swathes of the populations in countries like the USA and Israel. So far, the groups who are advised to hold off from getting the vaccine are people who are immunocompromised and those who have allergies to ingredients in the vaccines. This means that most people with HD have the green light to go ahead and get vaccinated.

What do the doctors say?

We spoke with some expert HD doctors to hear what they think about the COVID vaccines.

"We are incredibly fortunate to be living in an era in which medical science has advanced to the point that we have vaccines less than a year into a pandemic. I and my colleagues in the Cardiff HD centre have now been vaccinated and I'm delighted to see that our local HD community are starting to be offered the vaccine. COVID-19 is a nasty condition and, especially considering what we now know about its impact on the brain in some individuals, it is clear that having the vaccine is far safer than catching COVID-19." - Professor Anne Rosser PhD FRCP

“To be vaccinated is to be given a superpower - the ability to defeat an enemy you haven’t even met. I volunteered for the clinical trial of the AstraZeneca vaccine and have been spending all my free time since Christmas eve vaccinating the people of London. The choice to consider isn’t between the vaccine and nothing, it’s between the vaccine and covid, which is the biggest threat currently facing the HD community. The vaccines are safe, incredibly effective, and pose no special risks to people with HD now or in the future. We need to do everything we can to get all our HD family members protected and safe from covid, so that we can get back to fighting HD together.” - Professor Edward Wild MA MB BChir FRCP PhD

“Patients and their families are asking about Covid-19 and Huntington’s disease. We are learning more and more about the pandemic and the vaccines to prevent the infection. There is a lot that we know and a lot that we do not know. Covid-19 is a potentially fatal condition. There are risk factors that make it more dangerous including older patients and those with other medical problems. Patients with Huntington’s disease are more likely to become sicker due to Covid-19 if they become infected. We do not have data about this in detail, but most physicians agree that HD patients should do everything that they can to prevent infection. I encourage all my patients to get approved vaccines when they are available. There are some risks to the vaccines, but these are minimal compared to getting the infection. There is no indication that taking medications for the treatment of HD will make someone more susceptible to the infection or make their condition worse. There is also no indication that any of the investigational drugs that are being tested for HD either for symptomatic improvement or reducing the rate of progression will make HD patients worse or increase the risk of getting Covid-19. In balancing risks and benefits, In summary, get vaccinated as soon as possible.” - Mark Guttman MD FRCP

““The science supporting the approved COVID vaccines is compelling. They are safe and effective, and while not tested specifically in the HD population, I would still encourage people in HD families to consider being vaccinated if they are offered.” - Professor Victor Sung MD

The bottom line

The science shows very clearly that the COVID vaccines are safe, effective and our best chance at combating this pandemic.

The authors have no conflicts of interest to declare. [For more information about our disclosure policy see our FAQ...](#)

GLOSSARY

Food and Drug Administration The government regulatory authority in the US responsible for approving new drugs

huntingtin protein The protein produced by the HD gene.

clinical trial Very carefully planned experiments designed to answer specific questions about how a drug affects human beings

efficacy A measure of whether a treatment works or not

messenger RNA A message molecule, based on DNA, used by cells as the final set of instructions for making a protein.

ASOs A type of gene silencing treatment in which specially designed DNA molecules are used to switch off a gene

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