

Moderna COVID-19 vaccine appears to clear safety hurdle in mouse: Study

CHICAGO: A series of studies in mice of Moderna's COVID-19 vaccine lent some assurance that it may not increase the risk of more severe disease, and that one dose may provide protection against the novel coronavirus, according to preliminary data released.

Prior studies on a vaccine for SARS - a close cousin to the new virus that causes COVID-19 - suggests vaccines against this type of virus might have the unintended effect of causing more severe disease when the vaccinated person is later exposed to the pathogen, especially in individuals who do not produce an adequately strong immune response. Scientists have seen this risk as a hurdle to clear before vaccines can be safely tested in thousands of healthy people.

While the data released by the US National Institutes of Allergy and Infectious Disease (NIAID) and Moderna offered some assurance, the studies do not fully answer the question. "This is the barest beginning of preliminary information," said Dr Gregory Poland, an immunologist and vaccine researcher at the Mayo Clinic who has seen the paper, which has yet to undergo peer-review. Poland said the paper was incomplete, disorganised and the numbers of animals tested were small.

The authors said they have submitted the work to a top-tier journal. Moderna's vaccine is in mid-stage test-

ing in healthy volunteers. Moderna said on Thursday it plans to begin final-stage trials enrolling 30,000 people in July. In the animal studies, mice received one or two shots of a variety of doses of Moderna's vaccine, including doses considered not strong enough to elicit a protective immune response. Researchers then exposed the mice to the virus.

Subsequent analyses suggest "sub-protective" immune responses do not cause what is known as vaccine-associated enhanced respiratory disease, a susceptibility to more severe disease in the lungs. "Sub-protective doses did not prime mice for enhanced immunopathology following (exposure)," Dr Barney Graham of the Vaccine Research Center at NIAID and colleagues wrote in the manuscript, posted on the bioRxiv website.

Further testing suggested the vaccine induces antibody responses to block the virus from infecting cells. The vaccine also appeared to protect against infection by the coronavirus in the lungs and noses without evidence of toxic effects, the team wrote.

They noted the mice that received just one dose before exposure to the virus seven weeks later were "completely protected against lung viral replication," suggesting a single vaccination prevented the virus from replicating in the lungs. —Reuters

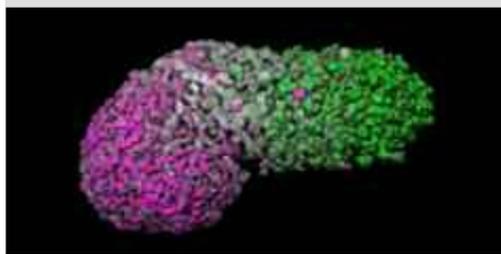


Scientists grow 'model' human embryos from stem cells

PARIS: Scientists have developed a human embryo "blueprint" using human stem cells, in a breakthrough that could provide vital insight into the early stages of infant development, new research showed.

Teams from the University of Cambridge and the Netherlands-based Hubrecht Institute said their model will allow them to observe never-before-seen processes underlying the formation of the human body. The layout of humans — known as the body plan — happens through a process known as gastrulation, where three distinct layers of cells are formed in the embryo that will later give rise to the body's three main systems: nervous, musculoskeletal and digestive. Gastrulation is known as the "black box" period of human development as legal restrictions prevent scientists from developing embryos in the lab beyond 14 days. The team behind the study, published in Nature, said their model resembles an embryo between 18 and 21 days old, around the same time as gastrulation occurs. Many birth defects happen during this period, and a better understanding of gastrulation could aid our understanding of issues such as infertility, miscarriage and genetic disorders, the researchers said. "Our model produces part of the blueprint of a human," said lead author Alfonso Martinez-Arias, from Cambridge's Department of Genetics. "It's exciting to witness the developmental processes that until now have been hidden from view — and from study. To create the three-dimensional models, known as gastruloids, the team collected tight bundles of human cells and treated them with chemicals that acted as signals to activate certain genes. It is the first time, the researchers said, that human stem cells have been used to create a 3D model human embryo, after some trials using stem cells from mice and zebra fish.

The scientists stressed that gastruloids never develop into fully formed embryos because they have no brain cells and lack any of the tissues for implantation in the womb. Nevertheless they were able to observe around 72 hours of the models' development and identify clear signs of the events that lead to the formation of muscles, bone and cartilage. Jeremy Green, a professor of developmental biology at King's College London, said the study was a "fantastic window" into the early formation of the human body. "(It) highlights the amazing power of self-organisation of cells and tissues given the right conditions," added Green, who was not involved in the research. —Reuters



Asymptomatic COVID-19: 5 things to know



Since the first cluster of cases of the novel coronavirus was reported in China last December, scientists have been racing to get a better understanding of the highly contagious disease, COVID-19, and how to stop its spread.

The coronavirus is transmitted from person to person through direct contact, droplets of saliva while coughing or discharge from the nose when sneezing. But there is ongoing scientific debate and research concerning the contagion passing on from asymptomatic carriers.

What is asymptomatic? Asymptomatic means a person has been infected by the virus, but does not feel sick or develop any symptoms. This is different from pre-symptomatic, which means a person does not show the symptoms in the early stages of the illness but develops them later on. For those who are not asymptomatic,

the time between infection and the onset of symptoms can range from one to 14 days. Most infected people show symptoms within five to six days.

According to the World Health Organization (WHO), the most common symptoms of COVID-19 are fever, fatigue and a dry cough. Some patients may experience aches and pains, sore throat, diarrhoea, or a loss of smell or taste. Can asymptomatic people spread coronavirus? The general consensus among health officials and experts is: Yes. WHO has maintained that asymptomatic people can transmit COVID-19 but more research is required to determine the extent of the transmission.

Dr Naheed Usmani, president of the Association of Physicians of Pakistani Descent of North America (APPNA), told Al Jazeera: "Asymptomatic people are generally not being

screened, at least in the United States. They can definitely spread the disease."

INTERACTIVE: Coronavirus COVID-19 symptoms explainer

How can asymptomatic carriers spread the virus? Like symptomatic and pre-symptomatic cases, asymptomatic people can shed the virus in many ways, including through spitting, coughing and sneezing. Infection can also be passed on through direct contact with others or by contaminating surfaces and objects. What does coronavirus cluster mean? COVID-19 terms explained

"When you speak, sometimes you'll spit a little bit," Anne Rimoin, an epidemiology professor at UCLA's School of Public Health, told CNN.

"You'll rub your nose. You'll touch your mouth. You'll rub your eyes. And then you'll touch other surfaces, and then you will be spreading virus if

you are infected and shedding" the virus. Are asymptomatic COVID-19 carriers less contagious? This remains unclear and more research is required. Based on current evidence, WHO says asymptotically infected individuals are less likely to transmit the virus than those who develop symptoms. Dr Usmani concurs. She said: "If infectivity correlates to the dose of the virus exposure, then asymptomatic carriers would be shedding lower viral copies."

How can you protect yourself? It is recommended to wash your hands frequently with soap and water, keep surfaces and objects clean and wear face masks, especially in crowded places. Where possible, maintain a safe distance between yourself and others - particularly if they are coughing and sneezing - and avoid touching your face, eyes and mouth with unwashed hands. —Agencies

Add Eggs in your daily diet to fight off infections

AIZBAH KHAN

Coronavirus attacks are rampant around the world, but nothing can be said about when this pandemic will end, so now we all have to live our lives fighting this virus.

Fighting coronavirus means that we need to be careful and take good care of ourselves, as well as eat a diet that strengthens our immune system. If our immune system is strong then the chances of getting any kind of virus or infection in the body will be less.

There are countless foods to strengthen the immune system that we can include in our diet to live a

healthy life. Incorporating eggs into the diet can be very helpful in strengthening the immune system as the nutrients in eggs can protect you from many infections. Eggs are rich in protein, vitamins A and B, which help strengthen the immune system and keep you strong. Vitamin B helps in the growth of red blood cells so that you do not become anaemic while Vitamin A helps in solving all the problems related to the eyes.

If you include eggs in your daily diet, it will strengthen your immune system and protect you from diseases and infections. Eating eggs with other foods increases our body's ability to absorb vitamins.

For example, according to one study, adding an egg to a bowl of salad can increase the amount of vitamin E in salads. An egg contains about two hundred milligrams of cholesterol so the cholesterol Patients should eat eggs carefully.

Egg contains omega-3 fatty acids which help in lowering the levels of triglycerides which reduces the risk of various heart-related diseases. Patients with diabetes, high cholesterol and heart disease should eat only two eggs a week. Eggs can be eaten in many different ways, but eating boiled eggs help to reduce body weight twice as fast.



People with O-blood group have a lower risk of contracting COVID-19



AIZBAH KHAN

KARACHI: People with the O blood group have a lower risk of contracting the new novel coronavirus.

The study by biotechnology company 23 and Me involved 7.5 million people, preliminary data of which have just been released. Preliminary results show that people with O-blood group are 9% to 18% less likely to be contracted with coronavirus.

When the researchers looked at people who had a higher risk of contracting the virus, they found that the chances of being diagnosed with COVID-19 in O-blood group were 3.2% lower than in others, 3.9 in A-blood group, 3.9, in B-blood group it

was 4% in group and 4.1% in AB blood group. But a statement from the company acknowledged that research was still in its infancy. The researchers said that in some reports, COVID-19 has been linked to blood clots and blood vessel diseases, suggesting that genes may play a role. Earlier, research in Germany and Norway claimed that people with a certain blood group were at higher risk for the disease.

Research has shown that people with A blood group may have a higher risk of catching the coronavirus.

The study identified two sites in the human genome that increase the risk of respiratory failure in people with COVID-19, one of which was in the gene that deter-

mines blood type. Research has shown that people with A blood group who have COVID-19 may be more likely to need oxygen or a ventilator. However, Andre Frank, a professor of molecular medicine at the University of Kyle in Germany, who was involved in the study, said it was not necessary for a blood group to determine a person's illness. "Until now, we have not been able to differentiate between blood groups or certain genetic factors linked to blood group," he said. Individuals are 50% more secure and those in Group A are 50 per cent more at risk. The researchers collected blood samples from 1610 patients undergoing treatment in hospitals in Italy and Spain who needed oxygen or a ventilator.