

「Does blood type affect the infection of novel coronavirus? People with blood type O are luckier?」

Updated 7 August, 2020. Cellspect Co., Ltd

Ordinarily, your blood type makes very little difference in your daily life except if you need to have a blood transfusion. However, since early in the pandemic of Covid-19, there's been an interest in learning whether blood type has anything to do with who is more likely to get infected by the coronavirus or how bad the effects will be.

As far back as March, Chinese researchers analyzed blood types in 2,173 infected individuals from Wuhan and Shenzhen and compared those results with surveys of blood types from healthy populations in the same region. They found that 38% of the covid-19 patients had type A blood, compared with just 31% of the healthy people surveyed. By contrast, type O blood seemed to lead to a reduced risk, with 26% of the infected cases versus 34% of healthy people. [1] Another study at Columbia University found similar trends: type A individuals were 34% more likely to test positive for the coronavirus, while those with type O or AB blood had a lower probability of testing positive. [2]

Above researches were not peer reviewed so even if it arouses everyone's interest, there are still some controversies. On June 17, A genome study published in the New England Journal of Medicine, looked at genetic data from more than 1,600 hospitalized covid-19 patients in Italy and Spain, comparing their genes with those of 2,200 uninfected individuals. Those researchers found two gene variants in two regions of the genome associated with a bigger likelihood of severe covid-19 symptoms—including one region that determines blood type. Overall, patients with type A blood had a 45% higher risk of experiencing respiratory failure after contracting covid-19, while those with type O had a 35% reduction in risk. [3]

If blood type does have something to do with covid-19 risk, scientists don't know yet what the causes would be. The authors of the NEJM study hypothesize that the proteins that define type A and B blood might affect the immune system's production of antibodies, and perhaps these blood types have a slower immune response as a result. The genes that determine blood type might also have something to do with the ACE2 receptor that the coronavirus uses to infect human cells.

The other new study, carried out at Massachusetts General Hospital, offers a somewhat different picture. The researchers concluded blood type did not affect whether people would have to be placed on ventilators, or their odds of dying. But interestingly, they also found that people with Type O were less likely to get Covid-19. [4]

Even though the impact of blood type on Covid-19 is still inconclusive, blood type could truly reveal

something important about the basic nature of the disease. Many studies have shown an association between blood types and diseases, for example, people with blood type O are more likely to be infected with plague, cholera, mumps and tuberculosis; type A blood is more likely to be infected with smallpox and *Pseudomonas aeruginosa*; type B blood is more susceptible to gonorrhea, tuberculosis, *Streptococcus pneumoniae*, *Escherichia coli* and *Salmonella* infections; AB blood is more susceptible to smallpox, *Escherichia coli* and *Salmonella*. [5]

Moreover, certain blood types have different clotting risks. A recent study of more than 400,000 people found that compared to people with type O blood, individuals in the type A and B groups were 51% more likely to develop deep vein thrombosis and 47% more likely to develop a pulmonary embolism and types A or B had a combined 8% higher risk of heart attack and 10% increased risk of heart failure. [6] The findings could have implications for why people with type O are less likely to be influenced as thrombosis is one of the important symptoms of Covid-19. [7]. However, this may be considered as a small benefit for people with blood type O of being a universal blood donor, but it is definitely not a golden shield. To fight this pandemic, everyone still needs to protect themselves thoroughly

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