

## Coronavirus: Who is Right about Potential Transmission through the Ocular Surface

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With an outbreak of acute respiratory illness associated with 2019 Novel coronavirus in Wuhan, China, more than 40 thousand of people have been confirmed infected by this virus, which leads to death of more than 9 hundred patients at present and poses a great risk to public health across the country. This newly identified virus has high infectivity, mortality rate and variable latency. No vaccine is available to prevent 2019-nCoV infection. All these impose a challenge in the prevention. The best way is to avoid being exposed to this virus. The identified transmission of this virus is air droplets. It is also probably transmitted through close contact with body fluids of infected people.

Some clinical workers think that this virus can be transmitted through eyes. Guangfa Wang, a member of the national expert panel on pneumonia, was reported to be infected by 2019-nCoV. He attributed his infection to not wearing protective eyewear and concluded the illness may be contracted through his conjunctiva as he complained of redness of his left eye several days before the onset of fever and following pneumonia [1].

Chenwei Lu., *et al.* [2] suggested that the exposure of unprotected eyes to 2019-nCov could cause acute respiratory infection based on the fact infectious droplets and body fluids can easily contaminate human conjunctival epithelium and SARS-CoV of similar origin can be transmitted through direct or indirect contact with eyes.

Some more medical professionals support this view that respiratory droplets from an infected person might have reached the eyes or other mucus membranes [3]. But does the virus really enter or infect the epithelial cells on the ocular surface? So far no evidenced has been collected. No conjunctival scrapings from the Guangfa Wang's infected eye has been performed to confirm the existence of virus. No clinical data revealed that any other confirmed cases contracted this disease through eyes or showed any eye related symptoms [4-6]. And none of them wear any of protective eyewear during their infection. Such a possibility can't be ruled out in the case of Guangfa Wang that common conjunctiva happens to him at an improper time. Another possibility could be that the virus spread through "eye to hand to nose or mouth" route. In this case ocular surface may serve as a temporary land point as other surfaces or objects without entering the cells and hand may be actually the key for transmission.

Currently the relationship between the virus and eyes may be more complicated and illusive until many more investigations can be performed and truth comes out. Whatever, high level protection including eyewear should be taken to those working at the frontline against this virus as they encounter all kinds of situations and are in greatest risk of exposure to virus. However, for the average populations, eyewear may not be as necessary as appropriate face mask and hand hygiene. Instead, unverified statement of virus transmitting through eyes could lead to panic and inappropriate response among people. More related researches are warranted.

### Disclosure

This article represents only the opinion of the author and has nothing to do with the affiliation. The author declares no commercial or competing interest.

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