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## Letter to the Editor

## Disinfection tunnels: potentially counterproductive in the context of a prolonged pandemic of COVID-19



There have been a lot of confidence-building measures rapidly instituted in the current coronavirus disease 2019 (COVID-19) pandemic without any scientific evidence to back them up. Foremost among these measures is the so-called 'disinfection tunnel' (DT) or 'sanitization tunnel.'<sup>1</sup> These are stationed outside crowded places such as vegetable markets, offices, shopping malls, and hospitals. People can walk through them or even ride through them on two wheelers. Essentially, these tunnels spray a mist of sodium hypochlorite solution. The first DT was installed in China and was imitated by other countries and cities.<sup>2,3</sup> These portable structures are made of steel and poly vinyl chloride (PVC) with the distance varying from 16 ft to 25 ft and can be of static and dynamic types.<sup>4,5</sup> In the static type, the person rotates inside the station for 10–15 min, and the disinfectant is sprayed from nozzles arranged in whole of the circumference. The dynamic type is a walk-through passage in which the person moves for 16–25 ft and the device sprays the disinfectant throughout the path. These tunnels are equipped with infrared detectors (sensor-based) that activate the disinfectant spray whenever a person enters. The cost of setting up these contraptions depends on basic models (130 USD) to high-end steel and chrome tunnels with various sensors, conveyor belts, and traffic lights (approximately 33,000 USD).

As coronavirus is an enveloped virus, any low-level disinfectant (e.g., 1% w/v sodium hypochlorite, isopropyl alcohol) will be able to destroy it. An ideal disinfectant for spraying and to be used in these tunnels should be nonvolatile, require less contact time, be harmless to mucous membranes and skin, and have virucidal and bactericidal activity. There are no guidelines and evidence supporting the efficacy of these disinfectants for human disinfection. These disinfectants can destroy the outer envelope of the virus, only if allowed for a recommended concentration with a contact period of more than 60 s.<sup>8,9</sup> Reduced contact period and diluted concentration limit the efficacy of these disinfectants. Direct inhalation or spraying of these disinfectants on human skin can be toxic and corrosive to skin and lead to various allergic disorders. Even for once, if we may think that these DTs may deactivate the virus on contaminated surfaces (skin and clothes of the person), any asymptomatic patient would remain infective as the virus in the nasopharynx and respiratory tracts remains viable, hence contributing to a

false sense of security among individuals. There is no way to test the benefits, other than mental satisfaction, which is just like the confidence wearing a cloth mask provides and thereby enables people to venture out into public places.<sup>10</sup> We often lose sight of the fact that the COVID-19 pandemic is likely to be prolonged over a few months at least, and therefore, population-level behavioral measures will also be needed to be practiced for a long period. Social distancing and hand hygiene are cumbersome and obstructive to usual life; therefore, a person with access to a DT may end up neglecting these standard measures.

DTs are likely to be a wasteful expenditure of scarce resources. The World Health Organization has condemned the use of these sprays and tunnels and has released an advisory.<sup>11</sup> The stress on these systems is not evidence based, unreliable, and flawed. While fighting this global pandemic, there is definitely a light at the end of the tunnel by practicing hand hygiene and social distancing, but not by passing through these DTs.

### References

1. Explained: What Are Disinfection Tunnels And Are They Safe? [Internet]. [cited 2020 Apr 13]. Available from: <https://www.outlookindia.com/website/story/india-news-explained-what-are-disinfection-tunnels-and-are-they-safe/350364>.
2. To Fight Coronavirus, Disinfectant Tunnel in China Sprays Industrial Workers World News US News [Internet]. [cited 2020 Apr 13]. Available from: <https://www.usnews.com/news/world/articles/2020-02-12/to-fight-coronavirus-disinfectant-tunnel-in-china-sprays-industrial-workers>.
3. 'Disinfection tunnels' and 'safe cabins' introduced at supermarkets The Bulletin [Internet]. [cited 2020 Apr 13]. Available from: <https://www.thebulletin.be/disinfection-tunnels-and-safe-cabins-introduced-supermarkets>.
4. Smart Disinfection and Sanitation Tunnel - Hackster.io [Internet]. [cited 2020 Apr 13]. Available from: <https://www.hackster.io/yugn27/smart-disinfection-and-sanitation-tunnel-aefe50>.
5. Chinese cities are rolling out disinfectant tunnels and spray trucks to ward off the coronavirus - but experts don't think it will work Business Insider India [Internet]. [cited 2020 Apr 13]. Available from: <https://www.businessinsider.in/science/news/chinese-cities-are-rolling-out-disinfectant-tunnels-and-spray-trucks-to-ward-off-the-coronavirus-160but-experts-dont-think-it-will-work/articleshow/74305925.cms>.
6. Name P. List N: disinfectants for use against SARS-CoV-2 other COVID-19 resources. 10–1; 2020.
7. Cleaning and disinfection for households CDC [internet]. [cited 2020 Apr 13]. Available from: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cleaning-disinfection.html>.

10. Ioannidis JPA. Coronavirus disease 2019: the harms of exaggerated information and non-evidence-based measures [Internet] *Eur J Clin Invest* 2020 Apr 19;50(4):1–5 [cited 2020 Apr 13]. Available from: <https://onlinelibrary.wiley.com/doi/abs/10.1111/eci.13222>.
11. Nash DB. Myth busters. *P and T [Internet]*33; 2008. p. 378 [cited 2020 Apr 13](7). <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters>. Available from:.

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