

A new device provides added protection against COVID-19 during endoscopic procedures

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The device. Credit: Hiroyuki Endo

The COVID-19 pandemic has thrown up unimaginable challenges for healthcare workers. Even simple outpatient procedures such as endoscopies can expose staff to the risk of infection.

However, a team of researchers has developed a simple, disposable, and inexpensive device to provide an additional barrier of protection for [healthcare workers](#) performing esophagogastroduodenoscopies (EGD).

An EGD is an endoscopic procedure by which a doctor examines a patient's esophagus, stomach, and upper intestines. The procedure causes patients to cough or retch, exposing workers to body fluids or aerosol droplets.

Given that COVID-19 is easily spread via air-borne transmission, researchers from the gastroenterology departments at the Tohoku University Graduate School of Medicine and the Japan Community Health Care Organization's Sendai Hospital set out to create a device capable of catching droplets without causing further discomfort to the patient.

The new device comprises a mouthpiece equipped with a fixing belt and a nonwoven fabric to cover the patient's face, thereby capturing aerosol droplets.

The square, nonwoven fabric is attached to the tips of the mouthpiece using symmetric cuts made by scissors. An x-shaped incision at the center of the fabric acts as a sleeve for the endoscope—providing minimal interference.

Special care was taken in choosing the fabric. Having a tight enclosure would expose patients to respiratory stress and risk choking if vomiting. The nonwoven [fabric](#) maintains high elasticity and air permeability, providing minimal discomfort for the patient.

"This device is expected to capture the coarse droplets from subjects undergoing an EGD and to reduce the diffusion of aerosol [droplets](#)," exclaimed Doctor Hiroyuki Endo, the corresponding author of the paper. "In addition to existing personal protective equipment, this simple and inexpensive device can be used as a standard precaution in every EGD."

More information: Hiroyuki Endo et al, Novel device for preventing diffusion of aerosol droplets from subjects undergoing esophagogastroduodenoscopy during COVID-19 pandemic, *Digestive Endoscopy* (2020). [DOI: 10.1111/den.13772](https://doi.org/10.1111/den.13772)

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