

Adapters redesigned to use snorkel masks as respirators for COVID-19 patients

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A team composed of Valencia Polytechnic University Professor Juan

Antonio García-Manrique, maxillofacial surgeon Dr. Alfonso Borja and the company Mecanizados Fransal has developed two models of adapters that make it possible to use commercial snorkel masks to treat patients affected by COVID-19 in hospitals and clinics, as well as to protect healthcare staff.

Professor García Manrique says they completed the design of the adapter following the suggestions of pulmonologists who treat patients with COVID-19. "This helped us simplify the design so that the adapters can be manufactured in a mechanized way or with plastic injection, which cheapens costs and enables [manufacturing](#) in large series," he highlights.

Until obtaining the final pieces, the [work team](#) manufactured an initial prototype printed in 3-D with stereolithography in a biocompatible and autoclavable material. Once they had the prototype, they started manufacturing them with five-axis CNC machining at Mecanizados Fransal in Alberique.



Credit: Asociación RUVID

"Machine manufacturing allows for greater manufacturing speed compared to 3-D printing, and it also avoids the issues derived from the porous structure of this type of pieces, thus providing a total barrier against the virus," stresses García Manrique.

In total they have manufactured 30 units for the Orthopaedic Surgery and Traumatology Department of Hospital Arnau de Vilanova—Dr. Alejandro Roslló and Dr. Julio Doménech—and eight more for Clínicas Borja.

Provided by Asociacion RUVID

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