

IRIS-SEALING MASK FOR THE MITIGATION OF THE SPREAD OF PATIENT AEROSOLS UNDERGOING INTUBATION, EXTUBATION, AND RESPIRATORY SUPPORT

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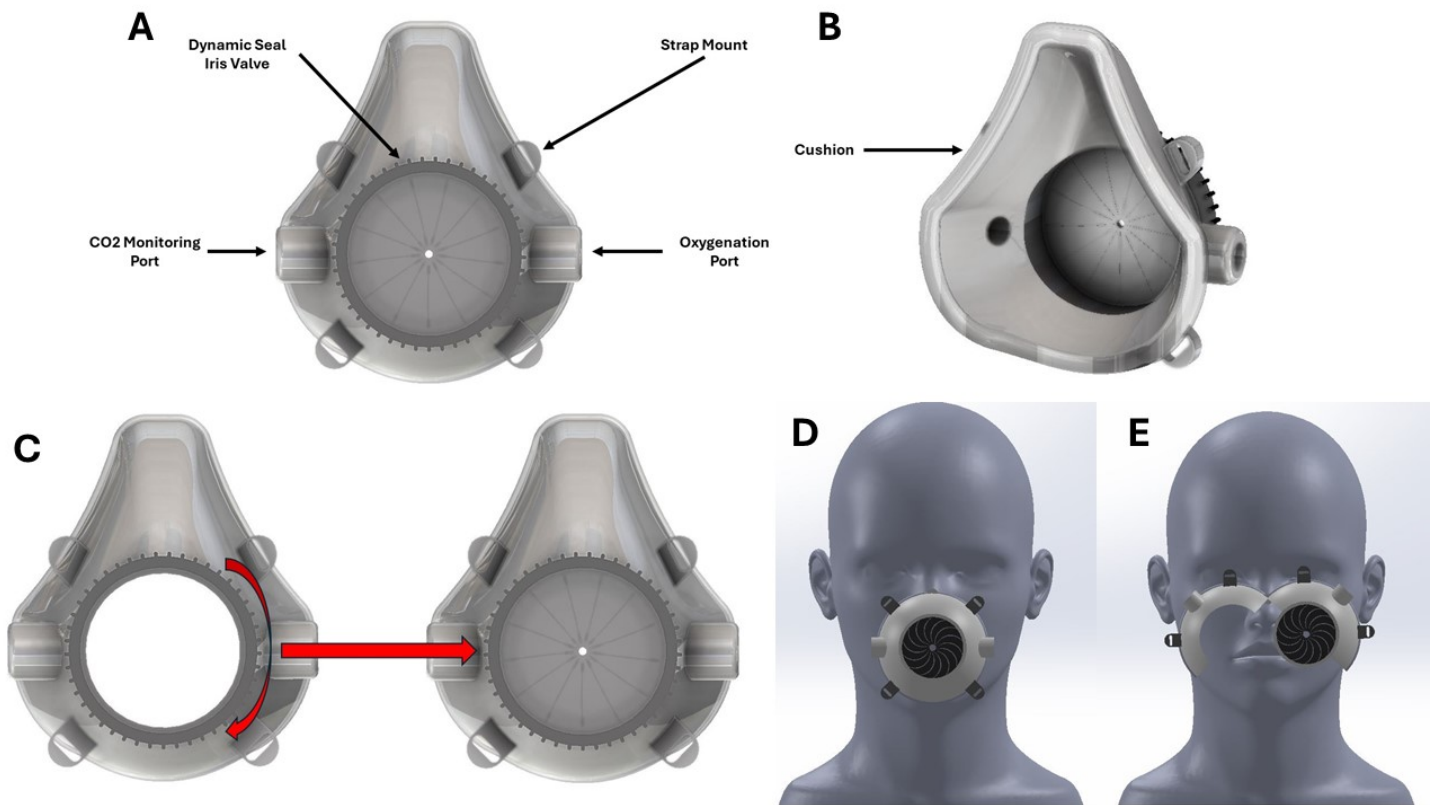
T-020364

Value Proposition: Masking device designed to provide protection for healthcare professionals from the spread of respiratory droplets during the extubation, intubation, and ongoing respiratory support of patients.

Technology Description

Researchers at Washington University in St. Louis have developed a masking device designed to protect healthcare professionals during intubation, extubation, and respiratory supplementation through the mitigation of the spread of a patient's respiratory droplets. This mask uses a large centrally located rotary "iris" (Dynamic Seal) valve to allow for the passage of intubating hardware through an emplaced mask (A). This Dynamic Seal valve forms a conforming seal about intubation hardware over the patient's oro-nasal region (D) following intubation, supplementing the anchoring of intubation hardware, may be quickly released to access the patient's oro-nasal region (C).

The mask may take a variety of shapes to best suit the desired application of the healthcare team and may also be hinged to facilitate emergency access to the patient's oro-nasal region, while retaining the conforming seal about the intubation hardware (E). The mask may also incorporate integral ports, which allow for the connection of Oxygen supplementation/monitoring and/or CO2 monitoring hardware (A).



A. Front of Dynamic Seal mask. (B) Rear of Dynamic Seal mask. (C) Closing/opening of Dynamic Seal valve using a rotary motion of the outer ring. (D) Placement of Dynamic Seal mask over patient's oro-nasal region. The shape of the mask may vary based on the needs of the medical team. (E) Illustration of a possibly incorporated hinge in the design of the Dynamic Seal mask, which may facilitate access to the patient's oro-nasal region without disengaging the Dynamic Seal.

Applications

- The mitigation of the spread of a patient's respiratory droplets while undergoing:
 - Intubation
 - Respiratory supplementation
 - Ongoing patient respiratory monitoring

Key Advantages

- Large, centrally located Dynamic Seal valve allows for the rapid forming of a conforming protective seal about intubation hardware, which may be easily and rapidly released if desired.
- Protects health care professionals against patient respiratory droplets during intubation, extubation, and ongoing respiratory support.
- Integral ports allow for the incorporation of hardware which may monitor/supplement patient O₂ and/or monitor patient CO₂.
- Hinged mask design may be incorporated to more readily facilitate access to the patient's oro-nasal region if desired by the healthcare team, while retaining the conforming seal about intubation hardware.

Patents

Patent application filed

Related Web Links – [Mohamed Zayed profile](#); [Zayed Lab](#)